

Digest of Education Statistics 1997

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CHAPTER 6

International Comparisons of Education

This chapter offers a broad perspective on education across the nations of the world. It also provides an international context for examining the condition of education in the United States. In the early 1990s, the National Center for Education Statistics (NCES) expanded its role in collecting international data by serving as the national research center for the International Association for the Evaluation of Educational Achievement (IEA) Reading Literacy Study. In addition, NCES has provided funding for international research studies comparing mathematics and science education, including the Third International Mathematics and Science Study (TIMSS) and the Second International Assessment of Educational Progress. NCES is also cooperating with international agencies in the compilation of statistics and the development of education indicators.

Some of the data in this chapter were drawn from materials prepared by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the Institute of International Education, the Organization for Economic Cooperation and Development (OECD), and the International Assessment of Educational Progress (IAEP). The basic summary data on enrollments, teachers, enrollment ratios, and finances were synthesized from information appearing in *Education at a Glance* published by OECD. Even though OECD tabulations are very carefully prepared, international data users should be cautioned about the many problems of definition and reporting involved in the collection of data about the educational systems in the world. This chapter provides information from the Third International Mathematics and Science Study (TIMSS), carried out by the International Association for the Evaluation of Educational Achievement (IEA). The mathematics and science performance of 8th grade students in 41 countries, and 4th grade students in 26 countries, was studied through assessments administered during 1994–95. The mathematics and science performance of students at the end of secondary schooling (12th grade in the U.S.) was also assessed at the same time, but the results were not available in time for presentation in this edition of the *Digest*.

A different perspective is provided by data on foreign students enrolled in U.S. institutions of higher education. These data from the Institute of Inter-

national Education provide information on the number of foreign students and their countries of origin.

Further information on survey methodologies is in the “Guide to Sources” in the appendix and in the publications cited in the source notes.

Population

The percent of young people in a population can influence the proportion of national income spent per student. Countries with a greater proportion of young people must set aside larger proportions of domestic product for their education. Among the OECD countries, Turkey had the largest percentage of young people ages 5 to 13 at 19.7 percent in 1995. The closest followers were Ireland at 15.2 percent, and Korea at 14.5 percent. Countries with relatively small numbers of persons in this age group included Italy at 9.1 percent, and Denmark at 9.7 percent. The proportion of 5- to 13-year-olds in the U.S. was 13.0 percent, which was higher than most other OECD countries (table 386).

Enrollments

In 1994, over 1 billion students were enrolled in schools around the world. Of these students, 639 million were in elementary-level programs, 351 million were in secondary programs, and 77 million were in higher education programs (table 388).

Between 1980 and 1994, enrollment changes varied from region to region. Elementary enrollment changes ranged from increases of 44 percent in Africa and 23 percent in Central and South America to a 2 percent decrease in Europe. Enrollment increases at the secondary level generally outpaced increases at the primary (elementary) level, especially in Africa (105 percent), Central and South America (46 percent), and Asia (42 percent). Secondary-level enrollment decreased in Europe by 1 percent, and in Northern America (U.S., Canada, and Greenland) by 3 percent (table 391).

Pupil/teacher ratios in elementary and secondary schools vary from country to country. Developed countries with relatively low pupil/teacher ratios at the elementary level in 1994 were Italy (10.2) and Denmark (11.0). Countries with relatively high ratios included Turkey (27.4) and Ireland (24.3) (table 393).

At the postsecondary level, developing areas of the world had substantial increases in enrollment between 1980 and 1994. Postsecondary enrollment rose by 135 percent in Africa and by 105 percent in Asia. Postsecondary enrollment in Oceania and Central and South America increased by 85 percent and 60 percent, respectively, followed by Europe at 23 percent and Northern America at 22 percent. These increases are due to growth in the postsecondary attendance rates and increased population (table 391).

Postsecondary enrollment varied among countries partially due to differing definitions of postsecondary education and at what age it begins. In 1994, among the OECD countries, Canada reported the largest proportion of 18- to 21-year-olds enrolled in postsecondary education at 40 percent, followed by the United States (35 percent), France (33 percent), New Zealand (31 percent), and Ireland (31 percent). In 1994, for the 22 to 25 age group, Finland's enrollment rate was highest at 27 percent, with Norway following at 24 percent, Canada at 23 percent, Denmark at 22, and the U.S. at 21 (table 387).

In 1995–96, there were 454,000 foreign students studying at U.S. colleges and universities. This was about the same as the year before. Approximately 57 percent of the students were from South and East Asian countries (table 408).

Achievement

TIMSS is the largest, most comprehensive comparative study of education that has ever been undertaken, testing a half million students. The study was designed to focus on students at different stages in school: midway through elementary school, midway through lower secondary school, and at the end of upper secondary school. Results from the fourth and eighth grade levels were released in late 1996 and 1997, respectively. Findings for twelfth grade are scheduled for release in early 1998.

The results of the 1994–95 TIMSS show U.S. fourth graders performing above the international average in both mathematics and science, and showing a stronger standing than eighth graders in both subjects. In addition, U.S. students perform better in science overall than in mathematics compared to their international counterparts at both grade levels.

Mathematics

In the 1994–95 TIMSS assessment in mathematics, U.S. fourth graders scored above the international average of 26 countries that participated. U.S. fourth graders performed below students in 7 countries, not significantly different from students in 6 countries, and above students in 12 countries. U.S. fourth graders scored below Japan, not significantly different from Canada, and above England (table

401). U.S. eighth graders scored below the international average of the 41 countries that were tested. In mathematics, U.S. eighth graders scored below their counterparts in 20 countries, including top performer Singapore, but not significantly different from England and Germany (table 395).

U.S. fourth graders' scores were above the international average in five out of six mathematics content areas tested: whole numbers; fractions and proportionality, data representation, analysis and probability; geometry; and patterns, relations and functions. The only area in which U.S. fourth graders did less well compared to other nations was measurement, estimation, and number sense. U.S. eighth graders' performance fell at about the international average in three areas (algebra; data representation, analysis, and probability; and fractions and number) out of the 6 content areas assessed. U.S. eighth grade students performed less well compared to other nations in the other three areas: geometry; measurement; and proportionality.

Science

U.S. fourth graders performed above the international average of the 26 countries testing fourth grade students in science. Only Korea scored above the U.S., with U.S. fourth graders outperforming 19 other countries, including England and Canada. The remaining countries' scores, including Japan's, were not significantly different from those of U.S. fourth grade students (table 402). U.S. eighth graders compared more favorably with other countries in science than mathematics, scoring above the international average of 41 countries. U.S. eighth students scored below their peers in nine countries, not significantly different from 16 countries, including Canada, England, and Germany, and outperformed students in 15 nations (table 397).

U.S. fourth grade students were above the international average in all four science content areas studied by TIMSS. Among the five science content areas studied at the 8th grade level in TIMSS, U.S. students performed above the international average in earth science, life science, and environmental issues, and no different from the international average in chemistry and physics.

Degrees

Ratios of bachelor's degrees conferred per hundred 22- or 23-year-olds in 1994 ranged from 1 in Italy and 2 in Portugal to 32 in the United States and Australia. In 1994, women had higher bachelor's degree ratios than men in 13 out of 16 countries reporting data (table 405).

Countries pay careful attention to the percent of graduates in the math and science fields. For undergraduate degrees awarded in science fields (includ-

ing natural sciences, mathematics, and computer science, and engineering), OECD countries reported rates from 18 to 41 percent for 1994. Germany, Finland, Belgium, Switzerland, Japan, and Austria were over 30 percent, while the United States, Canada, and New Zealand were under 20 percent (table 406). The proportion of graduate degrees awarded in science fields also ranged widely across countries. Among the countries with the highest proportions were Japan (54 percent), Sweden (44 percent), and Austria (37 percent). Among the countries with the lowest proportions were the United States (14 percent), Australia (14 percent), and New Zealand (19 percent) (table 407).

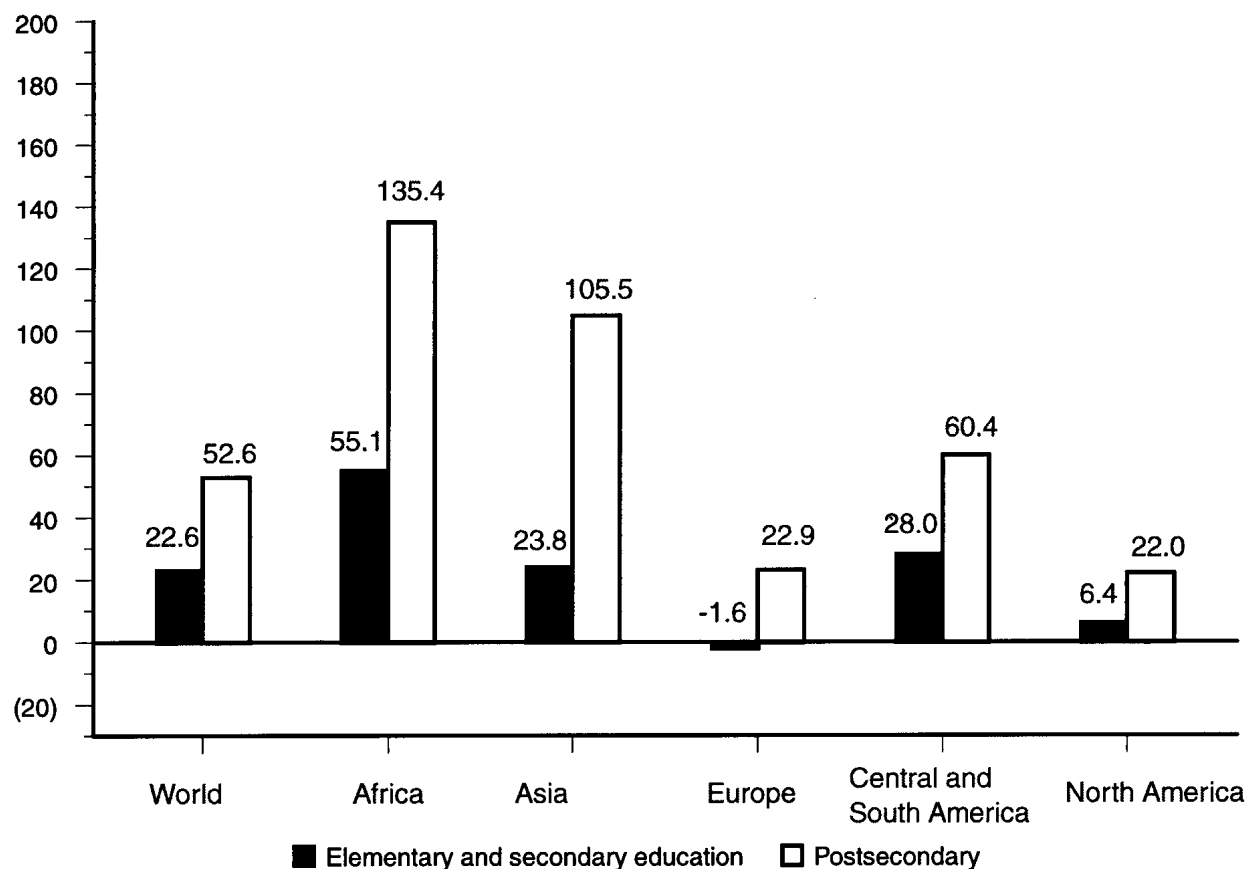
Finances

In general, higher income countries spend more per student than lower income countries. At the pri-

mary level of education, Sweden, the United States, and Switzerland ranked at the upper end of per pupil expenditures in 1993. For primary education per student, Sweden spent about \$4,900 per student, the U.S. spent \$5,500, and Switzerland spent about \$5,800. At the secondary level, Switzerland, Austria, United States, Germany and Denmark had expenditures over \$6,000 per student. Switzerland, the U.S., and Sweden spent relatively large amounts per student in higher education, with each having expenditures per student over \$12,000 (table 408).

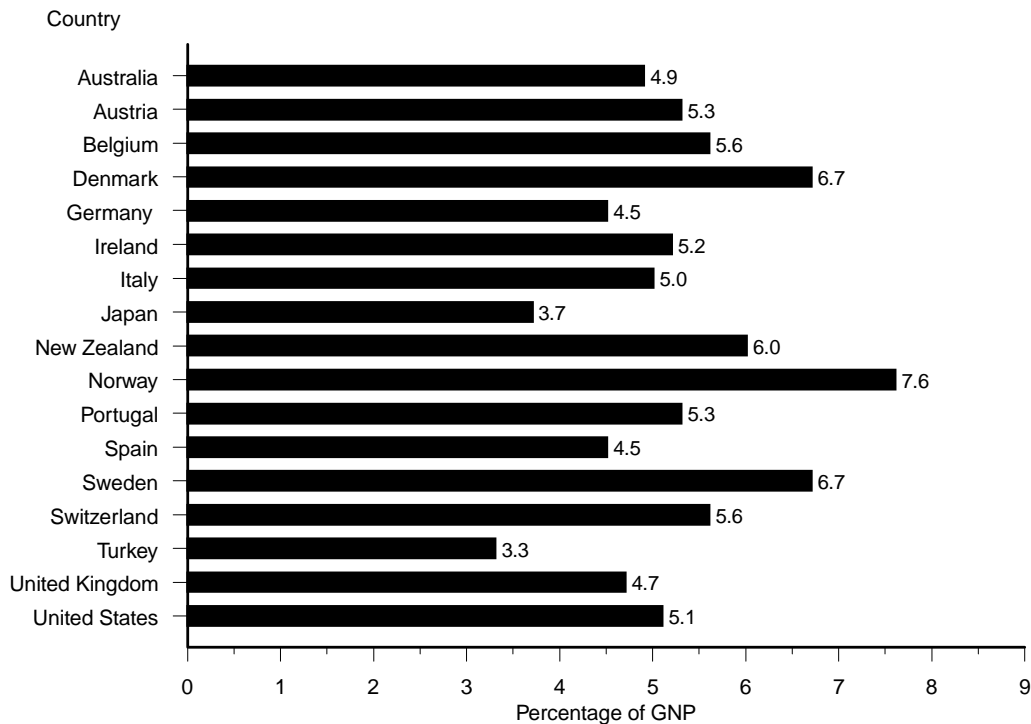
A comparison of public expenditures on education as a percent of gross domestic product (GDP) in OECD countries shows that national investment in education in 1993 ranged from 3.3 percent of GDP in Turkey to 7.6 percent in Norway (table 409).

Figure 28.-Percentage change in enrollment, by area of the world and level of education: 1980 to 1994



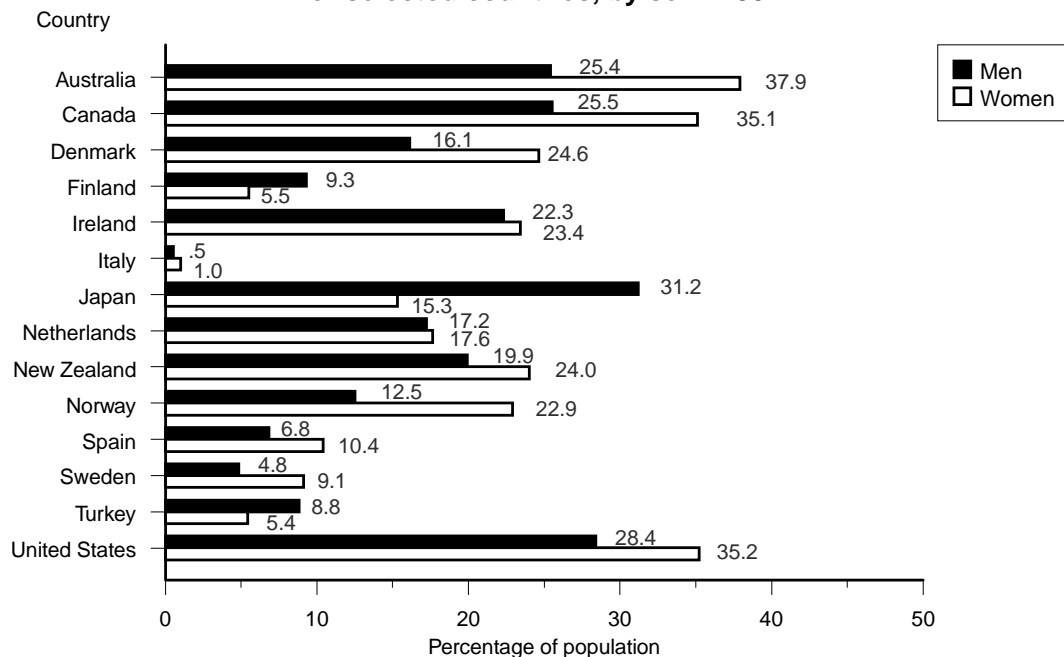
SOURCE: United Nations Educational, Scientific, and Cultural Organization, Paris, *Statistical Yearbook*, various years.

Figure 29.-Public expenditures for education as a percentage of gross national product: Selected countries, 1993



SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996; and unpublished data.

Figure 30.-Bachelor's degree recipients as a percent of population for selected countries, by sex: 1994



SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996.

Figure 31.-Nations' average mathematics performance compared to the United States: 1995

Fourth grade			Eighth grade		
Average scores significantly higher than the United States			Average scores significantly higher than the United States		
Singapore			Singapore	Switzerland	Russian Federation
Korea			Korea	(Netherlands)	(Australia)
Japan			Japan	(Slovenia)	Ireland
Hong Kong			Hong Kong	(Bulgaria)	Canada
(Netherlands)			Belgium- Flemish	(Austria)	(Belgium-French)
Czech Republic			Czech Republic	France	Sweden
(Austria)			Slovak Republic	Hungary	
Average scores not significantly different from the United States			Average scores not significantly different from the United States		
(Slovenia)	Canada		(Thailand)	Norway	Spain
Ireland	(Israel)		(Israel)	(Denmark)	Iceland
(Hungary)			(Germany)	(Scotland)	(Greece)
(Australia)			New Zealand	Latvia	(Romania)
Average scores significantly lower than the United States			Average scores significantly lower than the United States		
(Latvia)	Norway	Portugal	Lithuania	(Kuwait)	
Scotland	New Zealand	Iceland	Cyprus	(Colombia)	
England	Greece	Iran, Islamic Republic	Portugal	(South Africa)	
Cyprus	(Thailand)	(Kuwait)	Iran, Islamic Republic		

NOTE: Nations not meeting international guidelines are shown in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Pursuing Excellence: A Study of U.S. Fourth-Grade Mathematics and Science Achievement in International Context*, 1997 and *Pursuing Excellence: A Study of U.S. Eighth-Grade Mathematics and Science Achievement in International Context*, 1996.

Figure 32.-Nations' average science performance compared to the United States: 1995

Fourth grade			Eighth grade		
Average scores significantly higher than the United States			Average scores significantly higher than the United States		
Korea			Singapore	(Bulgaria)	Hungary
			Czech Republic	(Netherlands)	
			Japan	(Slovenia)	
			Korea	(Austria)	
Average scores not significantly different from the United States			Average scores not significantly different from the United States		
Japan			England	Sweden	(Thailand)
(Austria)			Belgium-Flemish	(Germany)	(Israel)
(Australia)			(Australia)	Canada	Hong Kong
(Netherlands)			Slovak Republic	Norway	Switzerland
Czech Republic			Russian Federation	New Zealand	(Scotland)
			Ireland		
Average scores significantly lower than the United States			Average scores significantly lower than the United States		
England	Hong Kong	Iceland	Spain	Portugal	Kuwait
Canada	(Hungary)	Greece	France	(Denmark)	Colombia
Singapore	New Zealand	Portugal	(Greece)	Lithuania	(South Africa)
(Slovenia)	Norway	Cyprus	Iceland	(Belgium-French)	
Ireland	(Latvia)	(Thailand)	(Romania)	Iran, Islamic Republic	
Scotland	(Israel)	Iran, Islamic Republic	Latvia	Cyprus	
		(Kuwait)			

NOTE: Nations not meeting international guidelines are shown in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Pursuing Excellence: A Study of U.S. Fourth-Grade Mathematics and Science Achievement in International Context*, 1997 and *Pursuing Excellence: A Study of U.S. Eighth-Grade Mathematics and Science Achievement in International Context*, 1996.

Table 389.—School-age populations as a percent of total population: Selected countries, 1985, 1990, and 1995

Country	5- to 13-year-olds as a percent of total population			14- to 17-year-olds as a percent of total population		
	1985	1990	1995	1985	1990	1995
1	2	3	4	5	6	7
Australia	14.5	13.1	12.9	6.6	6.4	5.6
Belgium	11.4	10.9	10.7	5.8	5.1	4.9
Canada	12.8	12.4	12.2	6.1	5.5	5.4
Czech Republic	—	—	11.6	—	—	6.5
Denmark	12.0	10.1	9.7	5.8	5.7	4.7
Finland	11.5	11.8	11.4	5.6	4.9	5.1
France	12.8	12.1	12.0	6.2	5.8	5.3
Germany ¹	9.1	8.7	10.0	6.1	4.1	4.3
Greece	—	—	10.7	—	5.5	5.8
Iceland	15.7	15.0	14.3	6.7	6.8	6.4
Ireland	17.9	17.5	15.2	7.7	8.0	7.8
Italy	12.7	10.3	9.1	6.5	6.0	4.8
Japan	14.0	11.8	10.2	6.2	6.5	5.4
Korea	—	—	14.5	—	—	7.1
Luxembourg	10.2	10.1	10.5	5.5	4.4	4.4
Netherlands	12.0	10.7	10.8	6.8	5.4	4.8
New Zealand	15.3	13.5	13.5	7.5	6.7	5.7
Norway	12.5	11.0	11.2	6.4	5.8	4.9
Portugal	15.3	14.3	10.9	6.9	6.8	6.1
Russian Federation	—	—	14.3	—	—	5.8
Spain	15.0	12.9	10.2	6.8	6.8	6.2
Sweden	11.3	10.2	10.8	5.4	5.2	4.6
Switzerland	10.6	10.1	10.4	5.8	4.8	4.5
Turkey	20.6	20.6	19.7	8.7	8.9	8.8
United Kingdom	11.4	11.1	11.6	6.3	5.2	4.8
United States	12.6	12.8	13.0	6.2	5.4	5.5

¹ Data for 1985 are for the former West Germany.
 —Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996; and unpublished data. (This table was prepared July 1997.)

Table 390.—Percent of population enrolled in secondary and postsecondary institutions, by age group: Selected countries, 1985, 1990, and 1994

Country	Secondary schools, 14 to 17 years old			Postsecondary institutions								
	1985	1990	1994	18 to 21 years old			22 to 25 years old			26 to 29 years old		
				1985	1990	1994	1985	1990	1994	1985	1990	1994
1	2	3	4	5	6	7	8	9	10	11	12	13
Belgium	91.7	—	—	24.5	—	—	7.2	—	—	1.5	—	—
Canada	92.5	95.8	—	25.5	28.9	40.3	9.5	11.4	22.8	3.0	3.4	9.6
Denmark	89.9	90.0	—	7.4	7.4	9.1	16.3	17.9	22.1	8.2	9.3	10.9
Finland	89.8	98.2	—	9.3	13.6	16.6	17.3	20.7	27.3	7.9	10.2	12.2
France	93.0	95.1	—	19.4	24.6	33.2	10.0	11.8	17.0	4.3	3.9	4.6
Germany ¹	94.7	94.2	—	8.8	8.5	11.2	15.5	15.9	17.2	8.9	10.4	10.3
Ireland	83.6	87.2	—	15.2	20.3	30.5	2.8	4.3	7.9	—	—	2.4
Japan	95.7	95.7	—	—	—	—	—	—	—	—	—	—
Netherlands	93.0	92.5	—	14.4	17.9	22.1	11.9	13.4	18.4	5.7	4.7	6.2
New Zealand	74.4	84.2	—	14.9	20.8	30.9	9.6	13.8	13.9	—	—	7.2
Norway	90.0	93.2	—	8.8	14.4	17.1	13.2	18.9	23.6	5.7	8.2	10.4
Portugal	—	—	—	5.8	—	19.3	5.4	—	13.4	2.3	—	4.8
Spain	67.3	79.1	—	14.9	21.2	25.4	10.6	13.5	17.5	4.0	4.5	6.2
Sweden	91.3	91.4	—	7.9	8.7	12.3	11.3	11.4	15.3	6.5	6.1	7.2
Switzerland	88.9	89.8	—	5.7	6.4	7.6	10.6	12.1	14.2	5.2	6.4	7.1
Turkey	—	32.6	—	—	7.4	10.5	—	4.6	7.2	—	2.3	3.2
United Kingdom	77.7	83.3	—	—	16.1	23.6	—	4.7	8.4	—	—	4.4
United States ²	92.1	92.9	—	33.0	36.2	34.9	14.5	17.1	20.9	8.2	8.5	10.4

¹ Data for 1985 are for the former West Germany.
² Postsecondary includes higher education only.
 —Data not available.

NOTE.—Some increases in enrollment rates may be due to more complete reporting by countries.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996; and unpublished data. (This table was prepared May 1997.)

Table 391.—Estimated population, school enrollment, teachers, and public expenditures for education in major areas of the world: 1980, 1990, 1993, and 1994

Item	World total ¹	Major areas of the world					
		Africa ²	Asia ³	Europe ⁴	Central and South America ⁵	Northern America ⁵	Oceania ⁶
1	2	3	4	5	6	7	8
1980							
Population, all ages, ⁷ in thousands	4,444,361	475,666	2,642,110	692,997	358,440	252,461	22,687
Enrollment, all levels, ⁸ in thousands	858,235	80,146	494,052	132,101	87,216	59,904	4,815
First (primary) level	539,471	64,249	335,871	48,669	65,319	22,611	2,752
Second level ⁹	268,187	14,355	144,495	66,810	16,967	23,914	1,647
Third level ¹⁰	50,578	1,543	13,687	16,623	4,930	13,379	416
Teachers, all levels, ⁸ in thousands	38,124	2,406	19,466	8,233	3,732	4,015	272
First (primary) level	18,854	1,712	10,830	2,343	2,261	1,579	129
Second level ⁹	15,525	600	7,477	4,573	1,083	1,679	112
Third level ¹⁰	3,745	94	1,159	1,317	388	757	31
Public expenditures on education, in millions of U.S. dollars	\$526,700	\$22,900	\$103,500	\$200,600	\$34,200	\$155,100	\$10,400
As a percent of gross national product	4.9	5.3	4.4	¹¹ 5.1	3.9	5.2	5.6
1990							
Population, all ages, ⁷ in thousands	5,284,843	632,672	3,186,447	721,739	439,719	277,838	26,428
Enrollment, all levels, ⁸ in thousands	977,149	108,274	564,914	131,805	104,974	61,971	5,211
First (primary) level	593,177	80,815	361,881	47,504	75,479	24,774	2,724
Second level ⁹	315,412	24,509	179,989	65,408	22,079	21,569	1,859
Third level ¹⁰	68,560	2,950	23,045	18,893	7,416	15,627	628
Teachers, all levels, ⁸ in thousands	46,793	3,809	24,069	9,399	5,154	4,031	331
First (primary) level	22,614	2,411	12,670	2,697	3,006	1,686	144
Second level ⁹	19,216	1,241	9,680	5,180	1,520	1,450	146
Third level ¹⁰	4,964	157	1,719	1,522	628	896	42
Public expenditures on education, in millions of U.S. dollars	\$1,017,000	\$26,000	\$227,100	\$368,000	\$47,100	\$330,200	\$18,600
As a percent of gross national product	4.9	5.7	4.2	¹¹ 5.0	4.1	5.4	5.6
1993							
Population, all ages, ⁷ in thousands	5,543,608	688,786	3,349,520	725,679	465,065	286,867	27,691
Enrollment, all levels, ⁸ in thousands	1,043,315	120,300	609,095	132,564	110,291	65,478	5,586
First (primary) level	626,422	88,821	382,302	47,312	79,018	26,103	2,865
Second level ⁹	341,345	27,987	199,642	65,221	23,495	23,057	1,942
Third level ¹⁰	75,547	3,492	27,151	20,031	7,778	16,317	779
Teachers, all levels, ⁸ in thousands	49,613	4,196	25,563	9,817	5,459	4,231	346
First (primary) level	23,920	2,681	13,216	2,839	3,216	1,819	149
Second level ⁹	20,336	1,332	10,354	5,413	1,581	1,502	154
Third level ¹⁰	5,356	183	1,993	1,565	662	911	43
Public expenditures on education, in millions of U.S. dollars	\$1,176,000	\$26,200	\$289,800	\$391,100	\$66,600	\$382,100	\$20,200
As a percent of gross national product	5.1	6.2	4.3	5.2	4.6	5.6	6.0
1994							
Population, all ages, ⁷ in thousands	5,629,635	708,288	3,403,427	726,355	473,544	289,899	28,122
Enrollment, all levels, ⁸ in thousands	1,067,192	125,572	622,850	134,008	113,251	65,848	5,662
First (primary) level	638,908	92,473	389,032	47,583	80,485	26,415	2,920
Second level ⁹	351,098	29,466	205,694	66,003	24,856	23,107	1,972
Third level ¹⁰	77,185	3,632	28,125	20,422	7,910	16,326	770
Teachers, all levels, ⁸ in thousands	50,494	4,360	25,947	10,000	5,594	4,245	348
First (primary) level	24,324	2,789	13,381	2,881	3,295	1,828	151
Second level ⁹	20,681	1,378	10,517	5,504	1,623	1,505	155
Third level ¹⁰	5,488	194	2,049	1,616	676	912	42
Public expenditures on education, in millions of U.S. dollars	\$1,275,700	\$26,300	\$315,700	\$432,700	\$72,100	\$405,400	\$23,500
As a percent of gross national product	5.2	6.1	4.4	5.4	4.5	5.4	6.1

¹ Enrollment and teacher data exclude the Democratic People's Republic of Korea. Expenditure data exclude Albania, Cambodia, Democratic People's Republic of Korea, Lao People's Democratic Republic, Lebanon, Mongolia, Mozambique, South Africa, and Viet Nam.

² Excludes Rodrigues and other small islands.

³ Excludes the former U.S.S.R., the Democratic People's Republic of Korea, and Arab states, but includes both the Asian and the European portions of Turkey.

⁴ Includes the former U.S.S.R.

⁵ Northern America includes Bermuda, Canada, Greenland, St. Pierre, Miquelon and the United States of America. Hawaii is included in Northern America rather than Oceania. Central and South America includes the rest of America.

⁶ Includes American Samoa, Australia, Guam and New Zealand.

⁷ Estimate of midyear population.

⁸ Excludes special and adult education provided outside regular schools. Data prior to 1992 exclude preprimary.

⁹ Includes general, teacher training and vocational education.

¹⁰ Includes universities and other institutions of higher education.

¹¹ This figure is for Europe, not including the former U.S.S.R.

SOURCE: United Nations Educational, Scientific, and Cultural Organization, Paris, 1996 *Statistical Yearbook*, "Facts on Education, Technology, and Culture Worldwide," various years. (This table was prepared May 1997.)

Table 392.—Selected statistics for countries ¹ with populations over 10 million, by continent: 1980, 1990, and 1994

Country	Population in millions			Persons per square kilometer in 1993	First level ²					
	1980	1990	1994		Enrollment in thousands			Enrollment ratio ⁶		
					1980	1990	1994	1980	1990	1994
1	2	3	4	5	6	7	8	9	10	11
World total ⁷	4,444.4	5,284.8	5,629.6	42	541,484	596,697	638,908	96.1	99.6	99.5
Africa										
Algeria ⁸	18.7	24.9	27.3	11	3,119	4,189	4,549	94	100	105
Angola	7.0	9.2	10.7	9	1,301	990	—	175	91	—
Cameroon	8.7	11.5	12.9	27	1,379	1,964	1,897	98	101	89
Cote D'Ivoire	8.2	12.0	13.8	43	1,025	1,415	1,612	79	71	68
Egypt ⁸	43.7	56.3	61.6	62	4,663	6,964	¹⁵ 7,313	73	94	98
Ethiopia	36.4	47.4	53.4	¹⁷ 45	2,131	2,466	⁹ 2,284	34	31	⁹ 27
Ghana	10.7	15.0	16.9	71	¹⁹ 1,378	1,945	—	80	77	—
Kenya ⁸	16.6	23.6	27.3	47	3,927	5,392	⁹ 5,643	115	95	⁹ 91
Madagascar ⁸	9.1	12.6	14.3	24	1,724	1,571	⁹ 1,505	136	87	⁹ 73
Morocco	19.4	24.3	26.5	59	2,172	2,484	3,007	83	67	80
Mozambique ⁸	12.1	14.2	15.5	19	1,387	1,260	1,302	99	66	62
Nigeria ⁸	72.0	96.2	108.5	117	²¹ 12,117	13,607	16,191	105	85	89
South Africa	29.2	37.1	40.6	33	4,353	6,952	7,972	85	109	117
Sudan ⁸	18.7	24.6	27.4	11	1,464	2,043	⁹ 2,377	50	50	⁹ 55
Uganda	13.1	17.9	20.6	86	1,292	2,470	⁹ 2,456	²⁴ 50	²⁴ 70	^{9,24} 67
United Republic of Tanzania	18.6	25.6	28.8	33	²⁵ 3,368	²⁵ 3,379	^{9,25} 3,737	93	70	⁹ 70
Zaire	27.0	37.4	42.6	18	4,196	4,562	⁹ 4,939	92	70	⁹ 68
Zimbabwe	7.1	9.9	11.0	28	1,235	2,116	⁹ 2,376	85	116	⁹ 115
Asia										
Afghanistan ⁸	16.1	15.0	18.9	29	1,116	623	1,161	34	27	44
Bangladesh	88.2	108.1	117.8	818	8,240	11,940	—	61	79	—
China ⁸	998.9	1,155.3	1,208.8	126	146,270	122,414	⁹ 124,212	113	127	⁹ 118
India	688.9	850.6	918.6	279	73,873	99,118	⁹ 108,201	83	98	⁹ 102
Indonesia	151.0	182.8	194.6	102	25,537	29,754	⁹ 29,876	107	115	⁹ 115
Iran, Islamic Republic of ⁸	39.3	58.9	65.8	40	4,799	9,370	9,746	87	110	⁹ 101
Iraq	13.0	18.1	19.9	45	2,616	3,328	—	113	111	—
Japan	116.8	123.5	124.8	330	11,827	9,373	8,583	101	100	102
Kazakstan	14.9	16.7	17.0	6	1,064	1,197	1,252	85	88	87
Korea, North (DPR)	18.3	21.8	23.5	195	—	²⁸ 1,543	—	—	—	—
Korea, South (Republic of)	38.1	42.9	44.6	449	5,658	4,869	4,099	110	105	98
Malaysia	13.8	17.9	19.7	60	2,009	²⁰ 2,456	⁹ 2,803	93	93	93
Myanmar (former Burma)	33.8	41.8	45.6	67	4,148	5,385	5,711	91	105	100
Nepal ⁸	14.9	19.3	21.4	152	1,068	2,789	⁹ 3,092	84	103	⁹ 109
Pakistan	85.3	121.9	136.6	172	5,474	11,451	⁹ 15,532	39	56	⁹ 69
Philippines	48.3	60.8	66.2	221	¹⁹ 8,034	10,427	10,904	112	113	111
Saudi Arabia	9.6	16.0	17.5	8	927	1,877	⁹ 2,111	61	73	⁹ 77
Sri Lanka ⁸	14.8	17.2	18.1	276	2,081	2,112	1,960	103	105	105
Syrian Arab Republic	8.7	12.3	14.2	77	1,556	2,452	2,651	100	109	103
Thailand ⁸	46.7	55.6	58.2	113	7,393	6,957	5,986	99	99	87
Turkey	44.4	56.1	60.8	78	5,656	6,862	⁹ 6,526	96	110	⁹ 97
Uzbekistan	15.9	20.4	22.3	50	1,391	1,778	1,906	82	82	77
Vietnam ⁸	53.7	66.7	72.9	220	7,887	8,862	10,048	109	103	114
Yemen	8.2	11.3	13.9	26	703	³⁰ 1,671	⁹ 2,679	—	—	⁹ 83
Europe										
Belarus	9.6	10.2	10.2	49	750	615	636	104	95	97
Czechoslovakia (former) ⁸	15.3	15.6	15.6	122	1,904	1,924	³³ 861	92	94	—
Czech Republic	10.3	10.3	10.3	131	—	546	523	—	96	100
Slovakia	5.0	5.3	5.3	109	—	—	338	—	—	101
France	53.9	56.7	57.7	105	4,610	4,149	4,011	111	108	105
Germany ³⁴	78.3	79.4	81.3	228	3,636	3,431	⁹ 3,524	—	101	⁹ 97
Greece	9.6	10.2	10.4	79	901	813	⁹ 724	103	98	⁹ 95
Hungary	10.7	10.4	10.2	109	1,162	1,131	985	96	95	97
Italy	56.4	57.0	57.2	190	4,423	3,056	⁹ 2,863	100	97	⁹ 98
Netherlands ⁸	14.1	15.0	15.4	377	1,333	1,082	⁹ 1,057	100	102	⁹ 97
Poland	35.6	38.1	38.3	119	4,167	5,189	5,205	100	98	99
Romania	22.2	23.2	22.9	96	3,237	1,253	1,336	102	91	94
Russian Federation	138.5	147.9	147.4	9	6,009	7,596	7,849	102	109	109
Spain	37.5	39.3	39.6	78	3,610	2,820	⁹ 2,448	109	107	⁹ 104
Ukrainian S.S.R.	50.0	51.6	51.5	85	3,592	3,991	^{9,37} 2,659	102	89	⁹ 87
United Kingdom	56.3	57.4	58.1	238	¹⁹ 4,911	¹⁹ 4,533	^{9,19} 5,143	103	104	^{9,39} 114
Yugoslavia, Federal Republic	9.5	10.2	10.8	105	—	467	⁹ 460	—	72	⁹ 70
North America										
Canada	24.6	27.8	29.1	3	2,185	2,376	⁹ 2,404	99	103	⁹ 103
Cuba ⁸	9.7	10.6	11.0	99	1,469	888	1,008	106	99	104
Mexico	67.1	84.5	91.9	47	14,666	14,402	14,574	122	115	111
United States ⁴¹	227.8	249.9	260.6	28	20,420	22,429	⁹ 23,694	100	105	⁹ 107
South America										
Argentina	28.1	32.5	34.2	12	3,917	4,965	5,126	106	106	111
Brazil ⁸	121.3	148.5	159.1	19	22,598	28,944	31,220	99	109	114
Chile	11.1	13.2	14.0	19	2,185	²⁶ 2,034	2,120	109	²⁶ 100	99
Colombia	26.5	32.3	34.5	30	4,168	4,247	4,648	124	110	121
Ecuador	8.0	10.3	11.2	40	1,534	1,846	¹⁷ 1,987	117	116	¹⁷ 123
Peru	17.3	21.6	23.3	18	3,161	3,855	4,031	114	118	123
Venezuela	15.1	19.5	21.4	23	⁴⁴ 3,158	⁴⁴ 4,053	^{9,44} 4,217	93	96	⁹ 94
Oceania										
Australia	⁴⁶ 14.6	⁴⁶ 16.9	⁴⁶ 17.9	2	1,718	1,583	1,640	112	108	107

¹ Selection based on total population for midyear 1993.² First level enrollment generally consists of elementary school, grades 1–6.³ Second level enrollment includes general education, teacher training (at the second level), and technical and vocational education. This level generally corresponds to secondary education in the United States, grades 7–12.⁴ Third level enrollment includes college and university enrollment, and technical and vocational education beyond the high school level. There is considerable variation in reporting from country to country.⁵ In many countries, a child may be exempt from school attendance if there is no suitable school within a reasonable distance of his/her home.⁶ Data are the total enrollment of all ages in the school level divided by the population of the specific age groups which correspond to the school level. The year shown in this column is the one in which the school or academic year starts. Adjustments have been made for the varying lengths of first and second level programs. Because some countries have many students from outside the normal age range, ratios may exceed 100.⁷ Enrollment totals and ratios exclude Democratic People's Republic of Korea. Data do not include adult education or special education provided outside regular schools.⁸ Classification of first and/or second levels have been revised. Data by level may not be comparable over time.⁹ Data for 1993–94.¹⁰ Data exclude Ecole Nationale d'Administration et de Magistrature (ENAM).¹¹ Eastern Cameroon.¹² Data for 1986–87.¹³ Data for 1988–89.¹⁴ The educational system allows for other alternatives.¹⁵ Data do not include Al Azhar.¹⁶ Excludes all private institutions.¹⁷ Data for 1992.¹⁸ Data for 1985–86.¹⁹ Data refer to public education only.²⁰ Data for 1989–90.²¹ Data for 1979.²² Data for 1984.²³ Data for 1981.²⁴ Data refer to government maintained and aided schools only.

**Table 392.—Selected statistics for countries ¹ with populations over 10 million, by continent:
1980, 1990, and 1994—Continued**

Second level ³						Third level ⁴						Age for compulsory attendance ⁵
Enrollment in thousands			Enrollment ratio ⁶			Enrollment in thousands			Enrollment ratio ⁶			
1980	1990	1994	1980	1990	1994	1980	1990	1994	1980	1990	1994	
12	13	14	15	16	17	18	19	20	21	22	23	24
264,371	314,150	351,098	46.3	51.2	55.4	51,038	68,820	77,185	12.2	13.7	15.3	—
1,028	2,176	2,473	33	61	62	79	286	—	5.9	11.4	—	6–15
191	186	—	20	12	—	2	7	—	0.4	0.8	—	7–15
234	500	9 550	18	28	27	10 12	33	—	1.6	3.2	—	116–12
222	—	—	19	23	25	20	12 24	—	2.9	13 3.1	—	147–13
2,929	15 5,507	15 6,138	50	76	77	716	16 708	—	16.1	17.5	9 16.9	6–11
18 666	866	17 721	8	13	11	14	34	—	0.4	0.8	—	7–13
693	20 830	—	41	37	—	8	10	—	1.6	1.4	—	146–14
428	18 458	—	20	18 21	25	13	20 31	—	0.9	1.6	—	6–14
21 234	—	—	22 30	17	9 14	23	36	—	2.6	3.1	17 3.5	6–13
797	1,124	1,299	26	35	38	112	221	251	5.9	10.1	10.0	7–13
23 108	160	171	5	8	7	1	17 5	9 5	0.1	18 0.1	9 0.4	147–13
21 1,865	2,908	4,451	16	23	30	150	20 336	—	2.2	18 3.3	—	6–12
—	2,743	3,571	12 55	68	82	—	439	618	—	12.8	15.9	7–16
384	732	—	16	23	—	29	20 60	—	1.7	3.0	—	7–12
87	268	9 261	24 5	24 12	24 11	6	18	9 24	24 0.5	24 1.1	13,24 1.3	—
25 79	25 167	9 197	3	5	5	—	20 5	—	—	18 0.3	—	7–13
862	26 1,097	9 1,341	24	18 26	9 24	28	13 61	—	1.2	13 1.9	—	6–12
75	661	9 640	8	49	44	8	49	—	1.3	5.2	—	7–15
137	182	498	10	9	22	12 22	24	—	—	1.7	—	7–13
2,659	3,593	—	18	19	—	240	434	—	2.8	3.9	—	6–10
56,778	51,054	9 53,837	46	48	9 55	27 1,161	27 2,147	9 4,505	1.7	2.9	9 3.8	147–16
32,748	18 44,485	9 64,116	30	44	9 49	3,545	4,951	—	5.2	6.0	—	6–14
5,722	10,965	9 11,360	29	44	9 45	22 980	26 1,773	17 1,795	—	8.5	—	7–13
2,718	5,085	7,653	42	54	69	18 184	19 312	478	0.0	9.1	12.7	6–10
1,033	18 1,191	17 1,145	57	47	—	107	13 210	—	8.7	12.6	—	6–12
9,558	11,026	9 10,203	93	97	9 98	2,412	26 2,899	—	30.5	29.1	—	146–15
1,996	2,144	9 2,020	93	98	9 91	525	537	483	34.1	40.2	33.6	6–18
—	28 2,468	—	—	—	—	—	28 390	—	—	—	—	5–15
4,286	4,560	4,569	78	90	96	29 648	1,691	2,197	14.7	38.6	50.8	6–15
1,084	20 1,456	26 1,567	48	58	61	58	121	9 170	4.1	7.2	9 9.6	146–16
1,066	18 1,284	—	22	23	30	163	26 196	9 235	4.7	4.3	9 5.1	5–10
512	709	9 910	21	31	9 36	19 34	94	9 102	2.7	4.9	9 4.8	6–11
2,166	4,345	—	14	23	—	18 268	20 337	—	18 2.5	2.9	—	7–13
2,929	4,034	4,763	64	73	80	1,276	1,709	—	24.4	27.4	9 26.8	—
349	893	9 1,199	29	44	52	62	154	9 201	7.1	11.6	9 13.9	—
1,267	2,082	2,316	55	74	75	43	26 55	60	2.7	5.2	6.1	5–15
604	914	929	46	52	45	140	222	17 194	16.9	18.3	17 17.6	6–11
1,920	2,230	3,432	29	30	49	18 1,027	20 952	17 1,156	14.7	15.7	20.6	6–11
2,218	3,808	9 4,523	35	54	9 64	246	750	1,174	5.4	12.9	9 19.6	6–14
2,879	3,195	3,319	106	100	93	516	603	—	28.5	30.6	17 31.8	—
—	—	—	42	33	41	115	20 186	—	2.1	2.8	9 3.2	6–11
73	31 421	9 212	—	—	23	8	26 53	—	—	26 4.4	—	6–15
760	968	1,025	98	93	94	340	322	9 300	39.0	45.9	9 42.4	14,32 6–15
781	864	—	89	83	—	197	190	—	17.4	17.0	—	6–16
—	—	1,147	—	—	92	120	118	165	17.5	16.0	19.2	6–15
—	—	664	—	—	90	—	—	82	—	—	18.7	6–15
5,014	5,522	9 5,737	85	99	9 106	1,077	1,699	9 2,083	25.3	39.6	9 49.7	6–16
35 8,457	7,398	9 7,796	—	98	9 101	1,624	2,049	9 1,875	27.2	33.9	9 35.6	6–18
740	851	9 851	81	99	9 98	121	283	9 314	17.1	25.5	9 42.5	146–15
357	514	523	70	79	81	101	102	9 134	14.1	14.0	9 16.9	6–16
5,308	5,118	9 4,716	72	79	9 81	1,118	1,452	9 1,682	27.0	30.8	9 37.3	6–13
36 1,391	1,402	9 1,352	93	120	9 123	360	479	9 512	29.3	39.8	9 47.1	145–16
1,674	1,888	2,443	77	81	96	589	545	9 748	18.1	21.7	9 27.5	7–14
871	2,838	2,252	71	92	78	193	20 165	9 250	12.1	20 8.5	9 12.9	7–14
12,991	13,956	9 13,732	96	94	9 88	5,700	5,100	4,458	46.1	52.2	43.3	147–17
3,977	4,755	9 4,734	87	105	9 113	698	1,222	9 1,469	23.2	36.7	9 44.1	6–15
3,406	3,408	9 4,731	94	93	92	38 880	38 895	—	41.6	46.5	—	14,32 7–15
5,342	4,336	17 4,537	83	86	94	827	1,258	9 1,615	19.1	29.1	9 40.6	5–16
—	788	9 812	—	63	9 62	—	26 133	144	—	26 18.0	26 18.3	7–15
2,323	2,292	9 2,472	88	101	9 106	40 1,173	1,917	9 2,011	57.1	94.7	9 102.9	146–16
1,146	1,002	674	81	89	75	152	242	141	17.3	20.9	13.9	6–11
4,742	6,704	7,265	48	55	60	930	1,311	—	14.2	14.1	9 13.8	6–14
42 21,585	42 19,270	9 42 20,578	91	92	9 97	12,097	13,710	9 14,473	55.6	74.1	9 79.7	147–16
23 1,366	2,160	2,238	56	68	67	491	26 1,077	1,052	21.8	26 40.7	35.8	146–14
2,819	3,499	4,510	34	39	46	1,409	1,540	1,661	11.1	11.3	11.4	7–14
538	720	664	52	72	68	145	255	43 343	12.3	26 23.2	9 26.7	6–13
1,733	26 2,378	2,936	41	17 61	64	272	26 511	588	9.1	17 15.5	17.5	6–12
592	18 730	17 814	53	55	17 55	270	207	—	34.9	20.0	—	6–14
1,203	1,698	1,996	59	67	74	306	682	756	17.3	30.4	30.9	6–16
45 222	45 281	9 45 311	21	35	9 35	307	550	—	20.6	29.0	—	5–15
1,100	1,278	1,274	71	82	84	324	485	933	25.4	35.5	40.9	146–16

²⁵ Data refer to Tanzania mainland only.²⁶ Data for 1991–92.²⁷ Includes full time students only.²⁸ Data for 1987–88.²⁹ Data do not include Air & Correspondence courses.³⁰ Data for Former Democratic Yemen do not include schools for nomads.³¹ Former Yemen Arab Republic only.³² Grade levels changed for compatibility with ISCED.³³ Data are a combination of data for the Czech Republic and Slovakia.³⁴ Data include both former East and West Germany.³⁵ Excludes technical education, consisting of both on the job training and school education.³⁶ Data do not include apprenticeships and health care training.³⁷ Enrollment data refer to grades 1–4 only since 1992–93.³⁸ Excludes students enrolled in third level programs in secondary specialized schools.³⁹ Includes infant classes in primary schools, previously considered as preprimary education.⁴⁰ Excludes trade and vocational programs.⁴¹ Population data are from the U.S. Bureau of the Census, *Current Population Reports*, "Population Estimates." Enrollment totals and ratios are based on data compiled by the National Center for Education Statistics and the U.S. Bureau of the Census. First level includes grades 1 through 6 (ages 5–10), second level includes grades 7 through 12 (ages 11–16), and third level includes ages 20–24.⁴² Revised data series corresponding to grades 7–12.⁴³ Data for 1995.⁴⁴ Data refer to grades 1 to 9 (basic education).⁴⁵ Data refer to grades 10 and 11.⁴⁶ Includes Norfolk Island.

—Data not available.

NOTE.—Some data have been revised from previously published figures.

SOURCE: United Nations Educational, Scientific, and Cultural Organization (UNESCO), Paris, *Statistical Yearbook*, various years; U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20; and U.S. Department of Education, National Center for Education Statistics, Common Core of Data and "Fall Enrollment in Institutions of Higher Education" surveys, and Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment" survey. (This table was prepared May 1997.)

Table 393.—Pupils per teacher in public and private elementary and secondary schools, by level of education: Selected countries, 1985 to 1994

Country	Elementary					Junior high schools					Senior high schools				
	1985	1990	1991	1992	1994	1985	1990	1991	1992	1994	1985	1990	1991	1992	1994
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Australia ¹	113.8	—	18.0	² 18.4	18.5	—	—	—	—	—	3.2	—	—	—	—
Austria	11.3	11.6	11.6	12.2	11.9	9.2	7.7	7.6	7.7	8.3	15.2	12.4	11.9	11.6	7.8
Belgium	—	—	9.3	13.7	13.3	—	—	—	—	—	—	—	4.6	—	—
Canada	18.1	17.1	—	—	16.5	16.0	15.5	—	—	19.1	16.0	15.3	—	—	19.1
Denmark	12.7	11.2	11.1	³ 10.9	11.0	10.2	9.3	9.2	³ 9.1	9.0	14.8	13.3	12.6	³ 10.4	9.1
France	—	—	22.7	⁴ 20.4	19.6	—	—	—	—	—	—	—	5.6	—	—
Germany ⁵	20.7	20.3	21.4	⁶ 19.6	20.5	16.9	14.6	14.8	⁶ 14.6	15.7	23.7	21.0	20.4	⁶ 19.0	12.0
Ireland	—	—	—	25.6	24.3	—	—	—	—	—	7.2	8.3	8.6	—	—
Italy	12.8	10.7	10.9	10.9	10.2	9.6	8.5	8.3	9.0	8.0	10.8	10.7	10.5	8.8	8.9
Japan	—	¹ 20.8	¹ 20.3	⁷ 19.8	19.2	—	18.6	17.7	⁷ 16.8	16.2	—	16.2	16.2	⁷ 16.4	15.8
Netherlands	20.2	19.2	19.0	⁸ 23.6	22.4	12.7	12.4	10.2	—	16.9	—	—	—	—	16.5
New Zealand	20.1	19.1	18.4	18.5	20.2	—	—	—	—	16.7	—	—	—	—	13.2
Norway	—	—	10.7	—	—	—	—	8.7	—	—	—	—	8.1	—	—
Portugal	—	—	13.3	—	12.2	—	—	0.1	—	—	—	—	5.2	—	—
Spain	26.8	21.2	19.7	21.2	19.2	21.4	18.8	17.8	17.6	18.2	15.3	14.8	14.7	15.9	14.8
Sweden	11.6	10.6	10.4	11.9	12.5	10.8	10.2	9.7	10.6	10.9	13.1	11.9	11.9	16.0	14.6
Turkey	31.1	30.6	30.5	29.3	27.4	41.3	48.4	49.7	47.5	45.6	11.0	12.1	13.1	13.2	14.1
United Kingdom	19.7	22.0	22.2	20.8	20.7	—	18.5	18.6	15.9	16.9	11.1	13.9	13.7	⁹ 14.8	15.1
United States	17.0	15.6	15.5	—	—	16.5	15.9	16.1	16.8	—	16.2	15.8	15.6	15.0	—

¹ Public schools only.² Teachers include principals, deputy principals and senior teachers mainly involved in administrative tasks.³ Full-time and part-time teachers are estimates. Distribution by school level (primary and lower secondary levels) is also an estimate. Kindergartens are classified as public institutions.⁴ The number of full-time equivalent teachers does not take into account the additional hours given by teachers. In public secondary education institutions, an increase of 6.6 per cent of total full-time equivalents would be observed if the additional hours were taken into account. The number of teachers in independent private secondary education institutions are entirely estimates. About 18 per cent of all the pedagogical and support staff, and about 7 per cent of all the staff employed in education have been estimated.⁵ Data for 1985 are for the former West Germany.⁶ Most components are estimates.⁷ Principals and vice-principals are included in "Teachers" while other staff is included in "Support staff." Full-time equivalents of part-time teachers are not calculated, since there are no valid and reliable data available on the basis of which such calculations can be made.⁸ Teaching staff do not include direction staff.⁹ Figures on teachers at lower secondary education are included in upper secondary education.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, various years; and unpublished data. (This table was prepared April 1997.)**Table 394.—Geography proficiency of 13-year-olds in educational systems participating in the International Assessment of Educational Progress: 1991**

Country	Average percent correct			
	All geography items ¹	Geographic skills and tools ²	Physical geography items ³	Cultural geography items ⁴
1	2	3	4	5
Hungary	69.8 (0.6)	76.3 (0.5)	67.8 (0.7)	65.0 (0.7)
Slovenia	65.3 (0.6)	67.9 (0.5)	63.6 (0.7)	64.3 (0.9)
Canada ⁵	63.0 (0.5)	69.5 (0.4)	61.0 (0.6)	58.2 (0.6)
Soviet Union (former) ⁶	62.6 (1.1)	72.2 (0.9)	61.2 (1.0)	53.4 (1.8)
United States	61.9 (0.8)	69.4 (0.6)	58.3 (1.0)	58.1 (1.0)
Spain ⁷	60.1 (0.7)	62.4 (0.9)	58.9 (0.7)	58.9 (1.1)
Korea	59.7 (0.5)	67.8 (0.5)	52.1 (0.7)	60.3 (0.6)
Ireland	58.5 (0.6)	62.7 (0.6)	59.5 (0.8)	52.3 (0.8)
Scotland	58.3 (0.6)	66.2 (0.5)	57.1 (0.8)	50.6 (0.8)

¹ All 24 geographic items.² Eight items testing ability to use maps, charts, and globes.³ Nine items testing knowledge of location of physical features and concepts of climate.⁴ Seven items testing knowledge of cultural entities and interactions between people and their environment.⁵ Eight provinces.⁶ Schools in 14 republics where instruction is in Russian.⁷ Schools where instruction is in Spanish, in all regions except Catalonia.

NOTE.—Standard errors appear in parentheses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, International Assessment of Educational Progress, *Learning About The World*, 1992. (This table was prepared May 1993.)

**Table 395.—Average eighth grade mathematics scores by content areas, and average time spent studying out of school, by country:
1994–95**

Country	Average percent correct by content area							Distribution of daily out-of-school study time in all subjects, with mean mathematics scores							
	Mathematics overall	Fractions and number sense	Geometry	Algebra	Data representation, analysis and probability	Measurement	Proportionality	Less than 1 hour		At least 1, but less than 2 hours		At least 2, but less than 3 hours		More than 3 hours	
								Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
International average percent correct	55 (0.1)	58 (0.1)	56 (0.1)	52 (0.2)	62 (0.1)	51 (0.1)	45 (0.2)	— —	— —	— —	— —	— —	— —	— —	— —
Australia ¹	58 (0.9)	61 (0.9)	57 (1.0)	55 (1.0)	67 (0.8)	54 (1.0)	47 (0.9)	15 (0.9)	486 (5.7)	46 (1.0)	541 (4.4)	22 (0.6)	543 (5.2)	17 (0.7)	532 (4.8)
Austria ¹	62 (0.8)	66 (0.8)	57 (1.0)	59 (0.8)	68 (0.8)	62 (1.0)	49 (0.9)	9 (0.8)	524 (6.7)	46 (1.3)	551 (4.1)	21 (0.9)	544 (4.5)	24 (1.2)	528 (5.3)
Belgium (Flemish)	66 (1.4)	71 (1.2)	64 (1.5)	63 (1.7)	73 (1.3)	60 (1.3)	53 (1.8)	2 (0.4)	² —	25 (1.3)	552 (8.9)	28 (1.1)	592 (5.9)	45 (1.6)	560 (4.6)
Belgium (French) ¹	59 (0.9)	62 (1.0)	58 (1.0)	53 (1.1)	68 (1.0)	56 (1.0)	48 (0.9)	7 (0.8)	466 (7.4)	32 (1.0)	543 (4.6)	21 (1.3)	544 (5.5)	40 (1.5)	519 (4.5)
Bulgaria ¹	60 (1.2)	60 (1.4)	65 (1.3)	62 (1.5)	62 (1.1)	54 (1.6)	47 (1.5)	— —	— —	— —	— —	— —	— —	— —	— —
Canada	59 (0.5)	64 (0.6)	58 (0.6)	54 (0.7)	69 (0.5)	51 (0.7)	48 (0.7)	14 (1.2)	514 (5.6)	47 (1.1)	538 (2.8)	18 (0.7)	534 (3.7)	21 (1.1)	511 (3.6)
Colombia ¹	29 (0.8)	31 (0.9)	29 (0.9)	28 (0.9)	37 (1.0)	25 (1.5)	23 (0.9)	2 (0.4)	² —	17 (1.1)	394 (5.2)	20 (1.2)	389 (3.6)	61 (1.9)	390 (3.5)
Cyprus	48 (0.5)	50 (0.6)	47 (0.6)	48 (0.7)	53 (0.6)	44 (0.9)	40 (0.7)	9 (0.5)	442 (5.8)	19 (0.7)	475 (3.9)	26 (0.8)	491 (4.0)	46 (0.9)	475 (2.9)
Czech Republic	66 (1.1)	69 (1.1)	66 (1.1)	65 (1.3)	68 (0.9)	62 (1.2)	52 (1.3)	13 (1.1)	551 (7.1)	57 (1.1)	571 (5.1)	17 (0.9)	568 (8.2)	13 (0.8)	542 (7.6)
Denmark ¹	52 (0.7)	53 (0.9)	54 (0.9)	45 (0.7)	67 (0.9)	49 (1.0)	41 (0.8)	39 (1.6)	517 (4.4)	39 (1.4)	508 (3.8)	13 (0.8)	479 (4.1)	9 (0.7)	468 (6.9)
England ¹	53 (0.7)	54 (0.8)	54 (1.0)	49 (0.9)	66 (0.7)	50 (0.9)	41 (1.1)	— —	— —	— —	— —	— —	— —	— —	— —
France	61 (0.8)	64 (0.8)	66 (0.8)	54 (1.0)	71 (0.8)	57 (0.9)	49 (0.9)	8 (0.7)	505 (8.0)	33 (1.2)	545 (3.6)	28 (1.0)	547 (4.5)	31 (1.2)	537 (3.7)
Germany ¹	54 (1.1)	58 (1.1)	51 (1.4)	48 (1.3)	64 (1.2)	51 (1.1)	42 (1.3)	14 (1.1)	476 (6.7)	51 (1.2)	521 (4.3)	18 (1.0)	524 (7.0)	17 (0.9)	498 (5.0)
Greece ¹	49 (0.7)	53 (0.8)	51 (0.7)	46 (0.8)	56 (0.8)	43 (0.9)	39 (1.1)	6 (0.6)	450 (7.4)	14 (0.7)	483 (5.2)	21 (0.7)	485 (3.9)	59 (1.2)	491 (3.3)
Hong Kong	70 (1.4)	72 (1.4)	73 (1.5)	70 (1.5)	72 (1.3)	65 (1.7)	62 (1.4)	13 (1.0)	539 (9.3)	32 (0.9)	586 (6.6)	25 (0.9)	607 (6.1)	30 (1.1)	604 (7.2)
Hungary	62 (0.7)	65 (0.8)	60 (0.8)	63 (0.9)	66 (0.7)	56 (0.8)	47 (0.9)	4 (0.4)	483 (11.3)	33 (1.1)	536 (5.0)	22 (0.9)	541 (5.2)	41 (1.3)	545 (3.7)
Iceland	50 (1.1)	54 (1.2)	51 (1.4)	40 (1.3)	63 (1.1)	45 (1.4)	38 (1.4)	5 (1.0)	450 (12.0)	46 (1.7)	501 (5.1)	25 (1.3)	489 (5.4)	23 (1.4)	477 (7.3)
Iran, Islamic Republic	38 (0.6)	39 (0.6)	43 (0.8)	37 (0.8)	41 (0.6)	29 (1.2)	36 (0.8)	1 (0.2)	² —	5 (0.5)	428 (5.6)	12 (1.0)	436 (4.8)	82 (1.3)	431 (2.4)
Ireland	59 (1.2)	65 (1.2)	51 (1.3)	53 (1.3)	69 (1.1)	53 (1.3)	51 (1.2)	5 (0.6)	465 (8.8)	29 (1.0)	517 (5.3)	40 (1.1)	547 (5.5)	26 (1.2)	533 (5.7)
Israel ¹	57 (1.3)	60 (1.4)	57 (1.4)	61 (1.6)	63 (1.3)	48 (1.6)	43 (1.6)	5 (0.6)	539 (10.9)	36 (2.2)	546 (6.3)	26 (1.5)	521 (6.8)	33 (2.1)	502 (6.3)
Japan	73 (0.4)	75 (0.4)	80 (0.4)	72 (0.6)	78 (0.4)	67 (0.5)	61 (0.5)	13 (0.8)	578 (5.3)	39 (0.8)	607 (2.6)	20 (0.6)	609 (4.0)	28 (1.0)	612 (2.7)
Korea	72 (0.5)	74 (0.5)	75 (0.6)	69 (0.6)	78 (0.6)	66 (0.7)	62 (0.6)	15 (0.9)	582 (4.9)	32 (1.1)	604 (3.5)	25 (0.8)	607 (4.0)	29 (1.2)	628 (4.3)
Kuwait ¹	30 (0.7)	27 (0.8)	38 (1.0)	30 (1.0)	38 (1.0)	23 (1.0)	21 (0.7)	3 (0.6)	358 (10.3)	13 (1.5)	401 (5.5)	19 (1.3)	397 (5.1)	65 (1.8)	392 (2.0)
Latvia (Latvian-speaking schools) ¹ ..	51 (0.8)	53 (0.9)	57 (0.8)	51 (0.9)	56 (0.8)	47 (0.9)	39 (0.9)	4 (0.5)	467 (9.4)	35 (1.1)	507 (4.4)	32 (1.2)	497 (4.9)	29 (1.2)	487 (3.4)
Lithuania ¹	48 (0.9)	51 (1.0)	53 (1.1)	47 (1.2)	52 (1.0)	43 (0.9)	35 (0.9)	5 (0.6)	453 (9.4)	39 (1.4)	487 (3.9)	28 (1.0)	481 (4.6)	28 (1.4)	474 (5.4)
Netherlands ¹	60 (1.6)	62 (1.6)	59 (1.8)	53 (1.6)	72 (1.7)	57 (1.6)	51 (1.9)	3 (0.9)	492 (16.2)	54 (1.7)	539 (9.0)	27 (1.7)	562 (7.0)	16 (0.8)	524 (6.0)
New Zealand	54 (1.0)	57 (1.1)	54 (1.1)	49 (1.1)	66 (1.0)	48 (1.2)	42 (1.0)	12 (0.9)	472 (5.6)	51 (1.2)	519 (4.7)	21 (1.0)	518 (6.1)	17 (0.9)	495 (5.6)
Norway	54 (0.5)	58 (0.6)	51 (0.6)	45 (0.7)	66 (0.6)	51 (0.6)	40 (0.6)	6 (0.5)	481 (6.8)	50 (1.2)	514 (2.9)	24 (0.9)	510 (3.6)	21 (0.9)	483 (3.6)
Portugal	43 (0.7)	44 (0.7)	44 (0.8)	40 (0.8)	54 (0.7)	39 (0.7)	32 (0.8)	3 (0.3)	458 (8.1)	41 (1.1)	463 (3.1)	18 (0.7)	455 (3.3)	38 (1.2)	448 (3.0)
Romania ¹	49 (1.0)	48 (1.0)	52 (0.9)	52 (1.3)	49 (1.0)	48 (1.1)	42 (1.2)	9 (0.7)	459 (10.4)	16 (1.0)	464 (7.0)	15 (0.7)	481 (5.4)	60 (1.6)	494 (4.2)
Russian Federation	60 (1.3)	62 (1.2)	63 (1.4)	63 (1.5)	60 (1.2)	56 (1.5)	48 (1.5)	4 (0.5)	493 (10.3)	33 (1.1)	538 (5.3)	25 (1.0)	538 (5.2)	38 (1.4)	544 (6.9)
Scotland ¹	52 (1.3)	53 (1.3)	52 (1.4)	46 (1.5)	65 (1.3)	48 (1.6)	40 (1.4)	17 (1.4)	461 (4.8)	54 (1.2)	506 (5.7)	17 (1.0)	517 (8.6)	12 (0.8)	503 (7.4)
Singapore	79 (0.9)	84 (0.8)	76 (1.0)	76 (1.1)	79 (0.8)	77 (1.0)	75 (1.0)	2 (0.3)	² —	7 (0.4)	642 (8.0)	13 (0.6)	652 (6.6)	78 (0.9)	643 (4.9)
Slovak Republic	62 (0.8)	66 (0.8)	63 (0.8)	62 (0.9)	62 (0.7)	60 (0.9)	49 (1.0)	6 (0.5)	549 (8.3)	46 (0.9)	556 (3.9)	25 (0.7)	548 (4.4)	23 (1.0)	532 (4.1)
Slovenia ¹	61 (0.7)	63 (0.7)	60 (0.9)	61 (0.8)	66 (0.7)	59 (0.9)	49 (0.8)	5 (0.5)	551 (9.8)	36 (1.0)	561 (4.1)	21 (0.8)	537 (4.8)	37 (1.1)	523 (3.4)
South Africa ¹	24 (1.1)	26 (1.4)	24 (1.0)	23 (1.1)	26 (1.2)	18 (1.1)	21 (0.9)	— —	— —	— —	— —	— —	— —	— —	— —
Spain	51 (0.5)	52 (0.5)	49 (0.6)	54 (0.8)	60 (0.7)	44 (0.7)	40 (0.8)	3 (0.4)	443 (5.5)	26 (1.0)	490 (3.1)	18 (0.9)	495 (3.3)	53 (1.3)	487 (2.4)
Sweden	56 (0.7)	62 (0.8)	48 (0.7)	44 (0.9)	70 (0.7)	56 (0.9)	44 (0.9)	7 (0.6)	496 (6.9)	55 (1.2)	528 (3.1)	17 (0.8)	525 (4.3)	21 (0.9)	503 (4.2)
Switzerland ¹	62 (0.6)	67 (0.7)	60 (0.8)	53 (0.7)	72 (0.7)	61 (0.8)	52 (0.7)	4 (0.3)	523 (7.9)	44 (1.2)	556 (3.4)	19 (0.8)	548 (5.1)	33 (1.1)	536 (4.0)
Thailand ¹	57 (1.4)	60 (1.5)	62 (1.3)	53 (1.7)	63 (1.1)	50 (1.4)	51 (1.5)	3 (0.3)	495 (11.9)	26 (1.0)	514 (5.4)	18 (0.7)	515 (5.7)	54 (1.5)	531 (6.6)
United States	53 (1.1)	59 (1.1)	48 (1.2)	51 (1.2)	65 (1.1)	40 (1.1)	42 (1.1)	17 (1.1)	471 (7.20)	42 (0.9)	514 (4.2)	17 (0.7)	507 (5.5)	24 (0.8)	498 (5.9)

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Insufficient data.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared June 1997.)

Table 396.—Instructional practices and time spent teaching mathematics in eighth grade, by country: 1994–95

Country	Percent of students whose teachers report using each organizational approach "most of every lesson"						Average number of hours mathematics is taught weekly to mathematics classes							
	Work together as a class and students respond to one another	Work together as a class and teacher teaches whole class	Work individually with assistance from teacher	Work individually without assistance from teacher	Work in pairs or groups with assistance from teacher	Work in pairs or groups without assistance from teacher	Less than 2 hours		At least 2, but less than 3.5 hours		At least 3.5, but less than 5 hours		5 hours or more	
							Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia ¹	² 14	² 46	² 64	² 27	² 25	² 9	² 5 (1.7)	528 (19.5)	50 (3.7)	518 (6.2)	44 (3.7)	552 (7.6)	1 (0.7)	³ —
Austria ¹	² 6	² 52	² 51	² 23	² 19	² 7	² 0 (0.0)	³ —	99 (0.1)	549 (4.1)	1 (0.1)	³ —	0 (0.0)	³ —
Belgium (Flemish)	10	59	57	36	6	5	⁴ 0 (0.0)	³ —	50 (4.4)	572 (5.6)	50 (4.4)	603 (5.4)	0 (0.0)	³ —
Belgium (French) ¹	⁴ 7	⁴ 38	⁴ 55	⁴ 29	⁴ 11	⁴ 5	⁴ 0 (0.0)	³ —	3 (1.8)	486 (12.9)	83 (4.2)	544 (4.7)	14 (3.8)	564 (10.0)
Canada	² 12	37	57	² 25	² 28	² 14	3 (1.2)	528 (11.8)	31 (3.8)	521 (5.0)	50 (3.6)	537 (4.3)	17 (3.1)	520 (10.2)
Colombia ¹	25	41	55	² 19	44	² 22	² 4 (2.0)	389 (8.2)	25 (5.5)	367 (8.8)	58 (5.4)	397 (3.9)	13 (3.3)	390 (8.2)
Cyprus	² 13	² 61	² 73	² 23	² 26	² 9	³ —	³ —	³ —	³ —	³ —	³ —	³ —	³ —
Czech Republic	5	47	72	42	13	8	1 (0.9)	³ —	6 (2.0)	587 (17.2)	90 (2.7)	561 (5.1)	3 (1.6)	535 (10.2)
Denmark ¹	5	41	74	16	18	4	—	—	—	—	—	—	—	—
England ¹	⁴ 19	⁴ 46	⁴ 57	⁴ 25	⁴ 14	⁴ 8	—	—	—	—	—	—	—	—
France	11	48	56	26	17	4	² 2 (1.4)	³ —	10 (3.2)	532 (13.4)	87 (3.3)	539 (3.9)	2 (1.3)	³ —
Germany ¹	⁴ 23	⁴ 70	⁴ 54	⁴ 15	⁴ 20	⁴ 9	⁴ 2 (1.5)	³ —	85 (3.1)	523 (5.3)	12 (2.9)	463 (13.3)	1 (0.9)	³ —
Greece ¹	4	58	60	18	14	3	4 (1.7)	459 (10.8)	88 (2.8)	486 (3.5)	3 (1.6)	459 (12.3)	4 (1.6)	480 (8.9)
Hong Kong	11	37	62	17	9	4	5 (2.4)	612 (47.4)	26 (5.2)	590 (19.5)	63 (5.8)	590 (7.6)	6 (2.9)	567 (30.1)
Hungary	11	60	65	22	7	1	0 (0.0)	³ —	75 (3.6)	538 (3.9)	23 (3.6)	536 (7.0)	1 (1.0)	³ —
Iceland	² 2	² 39	² 82	² 38	² 32	² 17	² 0 (0.0)	³ —	90 (2.9)	492 (5.3)	8 (2.9)	467 (3.5)	1 (0.2)	³ —
Iran, Islamic Republic	33	66	55	8	42	10	—	—	—	—	—	—	—	—
Israel ¹	² 70	² 65	² 35	² 68	² 51	² 62	² 6 (4.1)	523 (13.7)	41 (8.0)	520 (12.7)	47 (8.1)	514 (9.2)	6 (3.7)	579 (22.6)
Japan	22	78	27	15	7	1	4 (1.8)	607 (24.3)	91 (2.3)	602 (2.7)	4 (1.4)	649 (18.5)	0 (0.5)	³ —
Korea	39	89	41	30	12	11	1 (0.7)	³ —	90 (3.0)	610 (2.8)	5 (1.8)	608 (13.8)	5 (2.3)	604 (19.5)
Kuwait ¹	3	34	48	14	7	5	2 (1.6)	³ —	21 (6.5)	396 (6.8)	76 (6.6)	391 (2.3)	1 (1.0)	³ —
Latvia (Latvian-speaking schools)	24	86	90	² 55	28	² 11	1 (0.5)	³ —	30 (4.8)	491 (5.8)	62 (5.3)	492 (4.3)	8 (2.6)	489 (15.0)
Lithuania	10	55	72	25	32	10	1 (0.8)	³ —	61 (4.1)	482 (5.0)	29 (3.9)	481 (7.5)	9 (2.3)	448 (13.8)
Netherlands ¹	7	56	65	38	49	34	3 (1.9)	529 (54.2)	97 (1.9)	542 (8.1)	0 (0.0)	³ —	0 (0.0)	³ —
New Zealand	19	52	63	28	25	14	5 (1.8)	484 (11.6)	42 (4.3)	514 (7.1)	50 (4.3)	507 (6.4)	3 (1.5)	503 (27.3)
Norway	² 17	² 58	² 71	⁴ 4	² 36	⁴ 6	² 7 (2.6)	502 (5.0)	80 (3.9)	508 (3.1)	8 (2.8)	502 (7.7)	5 (2.1)	513 (7.7)
Portugal	10	67	69	5	50	4	1 (0.8)	³ —	89 (2.9)	455 (2.7)	10 (2.8)	452 (7.8)	0 (0.0)	³ —
Romania ¹	12	86	56	19	18	3	8 (2.6)	497 (17.6)	80 (3.4)	481 (5.0)	9 (2.5)	482 (12.4)	2 (0.6)	³ —
Russian Federation	6	66	65	37	22	13	0 (0.0)	³ —	17 (3.6)	519 (8.6)	70 (5.6)	533 (5.1)	14 (4.8)	567 (18.0)
Scotland ¹	² 5	² 34	² 62	² 28	² 7	² 3	5 (2.0)	473 (14.7)	35 (4.4)	500 (11.6)	60 (4.6)	494 (7.1)	0 (0.0)	³ —
Singapore	15	61	48	27	20	6	0 (0.0)	³ —	52 (4.7)	654 (6.9)	48 (4.7)	633 (7.6)	0 (0.0)	³ —
Slovak Republic	35	47	50	31	8	7	0 (0.0)	³ —	2 (1.3)	³ —	86 (3.0)	544 (3.2)	11 (2.9)	561 (11.0)
Slovenia ¹	² 11	² 60	² 87	² 34	² 40	² 11	² 0 (0.0)	³ —	87 (3.4)	542 (4.0)	12 (3.3)	525 (9.5)	1 (0.8)	³ —
Spain	² 15	² 68	² 58	² 24	² 15	² 10	² 2 (1.1)	³ —	28 (4.0)	480 (5.5)	62 (4.7)	490 (3.6)	8 (2.6)	494 (9.2)
Sweden	² 24	² 50	² 72	² 1	² 43	² 5	² 3 (1.2)	506 (24.2)	97 (1.3)	520 (3.2)	0 (0.4)	³ —	0 (0.3)	³ —
Switzerland	⁴ 4	⁴ 48	⁴ 61	⁴ 25	⁴ 35	⁴ 20	⁴ 2 (1.4)	³ —	14 (3.4)	520 (17.8)	71 (3.5)	557 (6.5)	13 (3.0)	566 (12.4)
Thailand ¹	² 19	⁴ 58	² 41	² 18	² 22	² 5	³ —	³ —	³ —	³ —	³ —	³ —	³ —	³ —
United States	² 22	² 49	² 50	² 19	² 26	² 12	⁴ 8 (1.4)	492 (26.2)	24 (3.4)	501 (9.9)	58 (4.4)	507 (5.4)	11 (2.8)	498 (10.0)

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Teacher response data available for 70 to 84 percent of students.

³ Insufficient data.

⁴ Teacher response data available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared June 1997.)

Table 397.—Average eighth grade science scores by content areas, and average time spent studying out of school, by country: 1994–95

Country	Average percent correct by content area						Distribution of daily out-of-school study time in all subjects, with mean science scores							
	Overall science scores	Earth science	Life science	Physics	Chemistry	Environmental issues and the nature of science	Less than 1 hour		At least 1, but less than 2 hours		At least 2, but less than 3 hours		More than 3 hours	
							Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
International average percent correct	56 (0.1)	55 (0.1)	59 (0.1)	55 (0.1)	51 (0.2)	53 (0.2)	— —	— —	— —	— —	— —	— —	— —	— —
Australia ¹	60 (0.7)	57 (0.8)	63 (0.8)	60 (0.7)	54 (0.9)	62 (1.0)	15 (0.9)	505 (6.9)	46 (1.0)	556 (4.1)	22 (0.6)	557 (4.9)	17 (0.7)	546 (5.0)
Austria ¹	61 (0.7)	62 (0.8)	65 (0.7)	62 (0.7)	58 (1.1)	55 (0.9)	9 (0.8)	551 (9.9)	46 (1.3)	563 (4.8)	21 (0.9)	561 (5.0)	24 (1.2)	553 (4.8)
Belgium (Flemish)	60 (1.1)	62 (1.2)	64 (1.1)	61 (1.1)	51 (1.3)	58 (1.5)	2 (0.4)	² —	25 (1.3)	545 (5.0)	28 (1.1)	562 (5.9)	45 (1.6)	547 (3.6)
Belgium (French) ¹	50 (0.7)	50 (0.9)	55 (0.9)	51 (0.7)	41 (0.8)	46 (1.0)	7 (0.8)	428 (6.9)	32 (1.0)	481 (4.7)	21 (1.3)	481 (4.5)	40 (1.5)	467 (4.0)
Bulgaria ¹	62 (1.0)	58 (1.2)	64 (1.0)	60 (1.0)	65 (1.7)	59 (1.5)	— —	— —	— —	— —	— —	— —	— —	— —
Canada	59 (0.5)	58 (0.6)	62 (0.6)	59 (0.4)	52 (0.7)	61 (0.7)	14 (1.2)	524 (6.1)	47 (1.1)	541 (2.8)	18 (0.7)	531 (3.9)	21 (1.1)	517 (3.6)
Colombia ¹	39 (0.8)	37 (0.8)	44 (0.9)	37 (0.8)	32 (1.0)	40 (1.1)	2 (0.4)	² —	17 (1.1)	421 (5.3)	20 (1.2)	422 (4.9)	61 (1.9)	413 (5.8)
Cyprus	47 (0.4)	46 (0.6)	49 (0.5)	46 (0.4)	45 (0.6)	46 (0.8)	9 (0.5)	430 (7.0)	19 (0.7)	468 (4.4)	26 (0.8)	475 (3.4)	46 (0.9)	466 (2.9)
Czech Republic	64 (0.8)	63 (1.2)	69 (0.8)	64 (0.7)	60 (1.2)	59 (1.1)	13 (1.1)	558 (9.0)	57 (1.1)	579 (3.9)	17 (0.9)	582 (7.2)	13 (0.8)	560 (6.4)
Denmark ¹	51 (0.6)	49 (0.7)	56 (0.7)	53 (0.7)	41 (0.8)	47 (1.0)	39 (1.6)	494 (4.4)	39 (1.4)	479 (4.1)	13 (0.8)	459 (5.5)	9 (0.7)	457 (6.8)
England ¹	61 (0.6)	59 (0.8)	64 (0.8)	62 (0.6)	55 (0.8)	65 (1.0)	— —	— —	— —	— —	— —	— —	— —	— —
France	54 (0.6)	55 (0.8)	56 (0.8)	54 (0.5)	47 (0.9)	53 (0.9)	8 (0.7)	481 (6.8)	33 (1.2)	497 (3.3)	28 (1.0)	506 (4.0)	31 (1.2)	499 (3.4)
Germany ¹	58 (1.0)	57 (1.0)	63 (1.1)	57 (1.0)	54 (1.3)	51 (1.3)	14 (1.1)	505 (8.2)	51 (1.2)	541 (4.6)	18 (1.0)	544 (7.0)	17 (0.9)	525 (6.5)
Greece ¹	52 (0.5)	49 (0.6)	54 (0.6)	53 (0.5)	51 (0.5)	51 (1.0)	6 (0.6)	473 (4.8)	14 (0.7)	497 (5.0)	21 (0.7)	500 (3.1)	59 (1.2)	502 (2.5)
Hong Kong	58 (1.0)	54 (1.0)	61 (1.0)	58 (0.9)	55 (1.0)	55 (1.3)	13 (1.0)	489 (7.3)	32 (0.9)	519 (4.7)	25 (0.9)	534 (4.8)	30 (1.1)	534 (5.2)
Hungary	61 (0.6)	60 (0.8)	65 (0.7)	60 (0.6)	60 (0.8)	53 (0.8)	4 (0.4)	519 (10.0)	33 (1.1)	553 (4.4)	22 (0.9)	557 (5.6)	41 (1.3)	557 (3.0)
Iceland	52 (0.9)	50 (1.2)	58 (1.0)	53 (0.9)	42 (0.8)	49 (1.0)	5 (1.0)	470 (8.7)	46 (1.7)	505 (5.6)	25 (1.3)	493 (4.5)	23 (1.4)	488 (7.5)
Iran, Islamic Republic	47 (0.6)	45 (0.6)	49 (0.6)	48 (0.7)	52 (0.8)	39 (1.1)	1 (0.2)	² —	5 (0.5)	476 (6.0)	12 (1.0)	479 (5.2)	82 (1.3)	471 (2.7)
Ireland	58 (0.9)	61 (1.0)	60 (1.1)	56 (0.8)	54 (1.0)	60 (1.1)	5 (0.6)	475 (9.0)	29 (1.0)	529 (5.4)	40 (1.1)	550 (4.7)	26 (1.2)	550 (4.9)
Israel ¹	57 (1.1)	55 (1.1)	61 (1.1)	57 (1.1)	53 (1.5)	52 (1.6)	5 (0.6)	532 (13.5)	36 (2.2)	555 (7.7)	26 (1.5)	523 (6.9)	33 (2.1)	505 (5.2)
Japan	65 (0.3)	61 (0.4)	71 (0.4)	67 (0.3)	61 (0.5)	60 (0.7)	13 (0.8)	551 (4.4)	39 (0.8)	573 (2.2)	20 (0.6)	572 (3.0)	28 (1.0)	577 (2.4)
Korea	66 (0.3)	63 (0.5)	70 (0.4)	65 (0.5)	63 (0.6)	64 (0.8)	15 (0.9)	544 (5.0)	32 (1.1)	564 (2.9)	25 (0.8)	562 (3.1)	29 (1.2)	581 (3.7)
Kuwait ¹	43 (0.9)	43 (1.0)	45 (1.1)	43 (0.7)	40 (1.5)	39 (1.3)	3 (0.6)	400 (10.4)	13 (1.5)	436 (7.8)	19 (1.3)	432 (7.1)	65 (1.8)	431 (3.4)
Latvia (Latvian-speaking schools)	50 (0.6)	48 (0.8)	53 (0.7)	51 (0.7)	48 (0.8)	47 (1.0)	4 (0.5)	468 (8.5)	35 (1.1)	492 (4.1)	32 (1.2)	490 (4.1)	29 (1.2)	481 (3.0)
Lithuania ¹	49 (0.7)	46 (0.9)	52 (0.9)	51 (0.7)	48 (0.9)	40 (1.0)	5 (0.6)	457 (9.1)	39 (1.4)	484 (4.5)	28 (1.0)	483 (3.8)	28 (1.4)	472 (4.7)
Netherlands ¹	62 (1.0)	61 (1.4)	67 (1.4)	63 (0.9)	52 (0.9)	65 (1.6)	3 (0.9)	519 (17.1)	54 (1.7)	559 (6.1)	27 (1.7)	578 (5.4)	16 (0.8)	545 (5.7)
New Zealand	58 (0.8)	56 (0.9)	60 (1.0)	58 (0.7)	53 (1.1)	59 (1.2)	12 (0.9)	488 (7.6)	51 (1.2)	536 (4.6)	21 (1.0)	537 (5.7)	17 (0.9)	516 (5.7)
Norway	58 (0.4)	61 (0.6)	61 (0.5)	57 (0.4)	49 (0.6)	55 (0.8)	6 (0.5)	501 (7.3)	50 (1.2)	533 (2.5)	24 (0.9)	536 (3.4)	21 (0.9)	516 (3.7)
Portugal	50 (0.6)	50 (0.7)	53 (0.6)	48 (0.5)	50 (0.9)	45 (0.8)	3 (0.3)	465 (8.8)	41 (1.1)	488 (2.9)	18 (0.7)	478 (4.1)	38 (1.2)	474 (2.8)
Romania ¹	50 (0.8)	49 (1.0)	55 (1.0)	49 (0.8)	46 (1.0)	42 (1.0)	9 (0.7)	460 (11.7)	16 (1.0)	468 (7.0)	15 (0.7)	487 (5.7)	60 (1.6)	499 (5.2)
Russian Federation	58 (0.8)	58 (0.8)	62 (0.7)	57 (0.9)	57 (1.3)	50 (0.8)	4 (0.5)	511 (10.1)	33 (1.1)	542 (4.4)	25 (1.0)	538 (4.4)	38 (1.4)	543 (4.6)
Scotland ¹	55 (1.0)	52 (1.0)	57 (1.1)	57 (0.8)	51 (1.3)	57 (1.4)	17 (1.4)	470 (5.3)	54 (1.2)	526 (5.1)	17 (1.0)	537 (8.5)	12 (0.8)	532 (6.5)
Singapore	70 (1.0)	65 (1.1)	72 (1.0)	69 (0.8)	69 (1.2)	74 (1.1)	2 (0.3)	² —	7 (0.4)	604 (8.4)	13 (0.6)	617 (7.3)	78 (0.9)	607 (5.4)
Slovak Republic	59 (0.6)	60 (0.7)	60 (0.6)	61 (0.6)	57 (0.8)	53 (0.9)	6 (0.5)	551 (7.1)	46 (0.9)	552 (3.7)	25 (0.7)	541 (3.8)	23 (1.0)	536 (4.7)
Slovenia ¹	62 (0.5)	64 (0.7)	65 (0.6)	61 (0.6)	56 (0.9)	59 (0.9)	5 (0.5)	559 (9.2)	36 (1.0)	580 (3.5)	21 (0.8)	557 (3.2)	37 (1.1)	544 (3.3)
South Africa ¹	27 (1.3)	26 (1.1)	27 (1.3)	27 (1.4)	26 (1.4)	26 (1.3)	— —	— —	— —	— —	— —	— —	— —	— —
Spain	56 (0.4)	57 (0.5)	58 (0.5)	55 (0.4)	51 (0.7)	53 (0.6)	3 (0.4)	482 (7.9)	26 (1.0)	522 (2.8)	18 (0.9)	522 (3.5)	53 (1.3)	516 (2.2)
Sweden	59 (0.6)	62 (0.7)	63 (0.7)	57 (0.5)	56 (0.7)	52 (0.8)	7 (0.6)	520 (6.0)	55 (1.2)	544 (3.2)	17 (0.8)	539 (4.9)	21 (0.9)	523 (4.9)
Switzerland ¹	56 (0.5)	58 (0.6)	59 (0.6)	58 (0.5)	50 (0.7)	51 (0.8)	4 (0.3)	500 (8.3)	44 (1.2)	530 (3.1)	19 (0.8)	526 (6.2)	33 (1.1)	514 (3.5)
Thailand ¹	57 (0.9)	56 (1.0)	66 (0.9)	54 (0.7)	43 (1.2)	62 (1.1)	3 (0.3)	510 (8.8)	26 (1.0)	520 (4.0)	18 (0.7)	519 (4.3)	54 (1.5)	532 (4.1)
United States	58 (1.0)	58 (1.0)	63 (1.1)	56 (0.8)	53 (1.2)	61 (1.0)	17 (1.1)	507 (9.5)	42 (0.9)	548 (4.1)	17 (0.7)	541 (5.2)	24 (0.8)	533 (5.7)

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Insufficient data.

— Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared June 1997.)

Table 398.—Instructional practices and time spent teaching science in eighth grade, by country: 1994–95

Country	Percent of students whose teachers report using each organizational approach "most of every lesson"						Average number of hours science is taught weekly to science classes							
	Work together as a class and students respond to one another	Work together as a class and teacher teaches whole class	Work individually with assistance from teacher	Work individually without assistance from teacher	Work in pairs or groups with assistance from teacher	Work in pairs or groups without assistance from teacher	Less than 2 hours		At least 2, but less than 3.5 hours		At least 3.5, but less than 5 hours		5 hours or more	
							Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Austria ¹	² 3	² 65	² 13	² 3	² 18	² 12	—	—	—	—	—	—	—	—
Belgium (Flemish)	² 11	² 62	² 19	² 6	² 13	² 7	—	—	—	—	—	—	—	—
Belgium (French) ¹	³ 11	³ 53	³ 24	³ 8	³ 8	³ 4	—	—	—	—	—	—	—	—
Canada	³ 17	² 28	² 26	² 23	² 33	³ 24	² 11 (2.1)	512 (8.9)	69 (3.9)	540 (3.8)	11 (2.5)	528 (5.5)	8 (2.1)	517 (10.3)
Colombia ¹	² 33	² 48	² 55	² 10	² 43	² 13	² 6 (2.3)	416 (4.5)	75 (4.2)	415 (5.6)	13 (3.2)	404 (5.5)	6 (2.4)	403 (18.6)
Cyprus	³ 3	³ 74	³ 35	³ 3	³ 17	³ 6	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —
Czech Republic	11	70	² 46	15	14	4	—	—	—	—	—	—	—	—
Denmark ¹	³ 2	³ 22	³ 25	³ 3	³ 46	³ 13	—	—	—	—	—	—	—	—
France	16	57	34	16	27	12	—	—	—	—	—	—	—	—
Germany ¹	³ 30	³ 69	³ 28	³ 7	³ 19	³ 5	—	—	—	—	—	—	—	—
Greece ¹	3	67	45	10	13	1	—	—	—	—	—	—	—	—
Hong Kong	12	45	35	2	44	13	7 (2.3)	492 (29.9)	82 (3.9)	526 (5.3)	9 (3.3)	518 (8.6)	2 (1.6)	(⁴)—
Hungary	7	80	54	13	11	2	—	—	—	—	—	—	—	—
Iceland	³ 1	² 35	² 30	² 9	² 16	² 6	—	—	—	—	—	—	—	—
Iran, Islamic Republic	25	57	36	2	25	11	—	—	—	—	—	—	—	—
Ireland	³ 7	³ 62	³ 25	³ 6	³ 20	³ 6	³ 4 (1.9)	578 (16.5)	94 (2.1)	540 (6.2)	2 (0.8)	⁴ —	0 (0.0)	⁴ —
Israel ¹	³ 17	² 41	² 30	² 15	² 32	² 18	³ 19 (7.9)	547 (19.6)	77 (7.2)	520 (9.1)	4 (3.5)	529 (0.0)	0 (0.0)	⁴ —
Japan	19	79	12	8	12	6	5 (1.6)	618 (15.2)	94 (1.7)	569 (1.5)	0 (0.0)	⁴ —	1 (0.6)	⁴ —
Korea	34	83	28	8	15	3	43 (2.9)	569 (3.3)	51 (3.2)	561 (3.1)	1 (0.8)	⁴ —	5 (2.3)	568 (12.7)
Kuwait ¹	² 9	² 46	² 45	² 0	² 36	² 2	² 3 (2.6)	409 (1.9)	97 (2.6)	426 (4.4)	1 (0.5)	⁴ —	0 (0.0)	⁴ —
Latvia (Latvian-speaking schools)	³ 25	³ 84	³ 59	³ 32	³ 24	³ 8	—	—	—	—	—	—	—	—
Lithuania	² 16	² 60	² 57	² 22	² 26	² 8	—	—	—	—	—	—	—	—
Netherlands ¹	² 5	² 63	² 36	² 23	² 25	² 18	—	—	—	—	—	—	—	—
New Zealand	15	41	33	26	44	20	1 (0.9)	⁴ —	52 (4.1)	527 (6.3)	47 (4.2)	525 (6.6)	0 (0.0)	⁴ —
Norway	³ 24	³ 62	³ 23	³ 1	³ 23	³ 4	³ 27 (4.9)	526 (3.0)	73 (4.9)	524 (2.6)	1 (0.6)	⁴ —	0 (0.0)	⁴ —
Portugal	14	66	54	3	54	5	—	—	—	—	—	—	—	—
Romania ¹	15	86	47	8	27	² 2	—	—	—	—	—	—	—	—
Russian Federation	9	68	43	21	13	7	—	—	—	—	—	—	—	—
Scotland ¹	³ 7	³ 22	³ 27	³ 11	³ 56	³ 19	³ 14 (3.1)	538 (23.4)	83 (3.6)	519 (4.8)	3 (1.7)	488 (22.5)	0 (0.0)	⁴ —
Singapore	12	59	41	17	40	19	0 (0.0)	⁴ —	24 (4.4)	618 (14.6)	76 (4.4)	603 (6.0)	0 (0.0)	⁴ —
Slovak Republic	² 48	² 64	² 45	² 15	² 3	² 1	—	—	—	—	—	—	—	—
Slovenia ¹	² 7	² 65	² 57	² 19	² 34	² 13	—	—	—	—	—	—	—	—
Spain	² 14	² 65	² 46	² 14	² 18	² 7	² 5 (2.6)	532 (2.5)	84 (3.9)	518 (2.1)	11 (3.0)	502 (9.4)	1 (0.7)	⁴ —
Switzerland	³ 3	³ 56	³ 21	³ 6	³ 30	8	³ 41 (4.7)	532 (6.6)	37 (4.4)	524 (8.4)	9 (3.1)	486 (13.7)	13 (3.5)	519 (15.6)
Thailand ¹	² 16	² 38	² 33	² 10	² 32	² 11	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —
United States	—	—	—	—	—	—	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —	⁴ —

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Insufficient data.

³ Teacher response data available for 70 to 84 percent of students.

⁴ Teacher response available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study, 1997*. (This table was prepared June 1997.)

Table 399.—Average size of eighth grade mathematics class, and frequency teachers assign mathematics homework, by country: 1994–95

Country	Average size of mathematics class				Percent of students taught mathematics by teachers, by frequency and average length of assignment						
	1 to 20 students	21 to 30 students	31 to 40 students	41 or more students	Never assigning homework	Assigning homework less than once a week		Assigning homework once or twice a week		Assigning homework 3 or more times a week	
						30 minutes or less	More than 30 minutes	30 minutes or less	More than 30 minutes	30 minutes or less	More than 30 minutes
1	2	3	4	5	6	7	8	9	10	11	12
Australia ¹	² 13 (2.4)	71 (3.3)	16 (2.6)	1 (0.5)	² 1 (0.8)	6 (1.6)	0 (0.2)	21 (2.6)	4 (1.9)	62 (3.4)	5 (1.7)
Austria ¹	—	—	—	—	² 0 (0.0)	1 (0.5)	0 (0.0)	24 (4.4)	3 (1.4)	63 (5.0)	10 (2.1)
Belgium (Flemish)	49 (3.6)	51 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	17 (3.5)	2 (1.1)	52 (4.8)	10 (2.6)	15 (2.9)	5 (2.1)
Belgium (French) ¹	³ 43 (5.3)	57 (5.3)	0 (0.0)	0 (0.0)	1 (1.2)	2 (1.4)	0 (0.0)	30 (5.1)	5 (2.2)	55 (5.5)	7 (2.8)
Canada	² 11 (2.1)	65 (4.0)	23 (3.6)	1 (0.5)	² 2 (1.1)	2 (0.9)	1 (0.7)	22 (3.4)	2 (0.9)	59 (3.7)	13 (2.7)
Colombia ¹	² 16 (4.2)	6 (2.2)	29 (4.0)	48 (4.6)	0 (0.0)	1 (0.9)	1 (0.8)	17 (4.7)	13 (2.9)	29 (4.2)	39 (4.2)
Cyprus	1 (0.0)	37 (3.9)	62 (3.9)	0 (0.0)	² 0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	50 (5.3)	50 (5.3)
Czech Republic	13 (3.3)	77 (5.3)	11 (4.5)	0 (0.0)	0 (0.4)	14 (4.5)	0 (0.0)	62 (5.2)	0 (0.3)	23 (3.5)	1 (0.6)
Denmark ¹	² 49 (4.8)	51 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)	4 (1.8)	0 (0.0)	42 (4.7)	3 (1.6)	49 (5.2)	2 (1.0)
England ¹	³ 18 (3.1)	62 (3.7)	20 (3.4)	0 (0.0)	0 (0.0)	3 (1.0)	1 (0.6)	44 (3.8)	47 (3.7)	3 (1.4)	2 (1.1)
France	11 (2.6)	86 (2.9)	3 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.9)	7 (2.5)	4 (1.2)	77 (3.9)	10 (2.8)
Germany ¹	³ 25 (4.4)	72 (4.5)	3 (1.8)	0 (0.0)	1 (1.4)	1 (1.4)	0 (0.0)	22 (4.4)	0 (0.0)	73 (5.0)	3 (1.8)
Greece ¹	9 (2.3)	64 (4.4)	27 (3.9)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.2)	31 (3.4)	67 (3.5)
Hong Kong	3 (1.9)	4 (2.2)	56 (5.7)	37 (5.9)	1 (1.4)	4 (2.2)	3 (1.8)	25 (4.7)	15 (4.1)	38 (6.0)	14 (4.1)
Hungary	37 (4.0)	57 (4.1)	6 (2.2)	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)	2 (1.3)	0 (0.0)	82 (3.0)	15 (3.1)
Iceland	² 36 (5.9)	64 (5.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (2.0)	1 (1.0)	75 (5.5)	19 (5.5)
Iran, Islamic Republic	² 1 (0.9)	26 (4.5)	54 (5.3)	19 (4.4)	0 (0.0)	1 (0.5)	3 (1.4)	10 (3.0)	59 (4.4)	2 (1.1)	26 (4.3)
Ireland	² 12 (2.7)	68 (4.5)	20 (3.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	94 (2.2)	5 (2.0)
Israel ¹	² 14 (5.1)	36 (7.4)	49 (9.1)	2 (1.6)	² 0 (0.0)	1 (1.2)	0 (0.0)	3 (2.2)	0 (0.0)	48 (7.1)	48 (6.8)
Japan	0 (0.2)	4 (1.4)	88 (2.0)	8 (1.5)	0 (0.0)	27 (4.0)	4 (1.7)	37 (3.7)	10 (2.3)	16 (2.9)	6 (1.5)
Korea	2 (1.2)	1 (1.0)	4 (1.5)	93 (2.0)	0 (0.0)	5 (1.6)	8 (2.2)	27 (3.7)	21 (3.3)	21 (3.2)	18 (3.4)
Kuwait ¹	0 (0.0)	49 (6.5)	49 (6.3)	2 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	19 (6.1)	2 (2.0)	60 (8.3)	18 (6.0)
Latvia (Latvian-speaking schools)	² 41 (4.0)	51 (3.8)	4 (2.1)	4 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (2.8)	1 (0.9)	83 (3.9)	9 (2.4)
Lithuania	² 43 (3.8)	54 (3.7)	3 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.3)	0 (0.0)	76 (3.9)	22 (3.9)
Netherlands ¹	16 (4.7)	77 (5.6)	7 (3.6)	0 (0.0)	1 (1.2)	1 (0.9)	0 (0.0)	12 (3.5)	2 (1.4)	81 (4.2)	4 (2.2)
New Zealand	11 (2.2)	68 (3.8)	21 (3.1)	0 (0.0)	0 (0.0)	5 (1.9)	2 (0.1)	34 (4.3)	4 (1.5)	54 (4.2)	2 (1.2)
Norway	² 20 (3.5)	79 (3.7)	1 (0.5)	1 (0.8)	² 0 (0.0)	0 (0.0)	0 (0.0)	7 (2.7)	8 (2.7)	67 (4.3)	18 (4.0)
Portugal	12 (2.8)	80 (3.7)	7 (2.6)	0 (0.0)	0 (0.0)	1 (0.9)	1 (0.5)	30 (4.0)	2 (1.1)	57 (4.1)	9 (2.4)
Romania ¹	23 (2.7)	51 (4.3)	24 (4.1)	2 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	1 (0.6)	11 (2.8)	87 (2.8)
Russian Federation	15 (2.7)	75 (3.6)	9 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.9)	1 (0.8)	42 (3.5)	55 (3.4)
Scotland ¹	² 12 (2.8)	80 (3.8)	8 (2.7)	0 (0.0)	² 0 (0.4)	20 (4.3)	4 (2.0)	46 (5.1)	6 (2.3)	24 (4.1)	0 (0.0)
Singapore	1 (0.7)	10 (2.5)	72 (4.3)	18 (4.0)	0 (0.0)	1 (0.9)	0 (0.0)	3 (1.5)	11 (3.1)	26 (4.1)	58 (4.5)
Slovak Republic	15 (2.8)	67 (4.2)	19 (3.6)	0 (0.0)	0 (0.0)	1 (0.9)	0 (0.0)	12 (2.8)	1 (0.7)	83 (3.4)	4 (1.7)
Slovenia ¹	² 15 (3.1)	80 (3.6)	5 (1.8)	0 (0.0)	² 0 (0.0)	0 (0.0)	0 (0.0)	2 (1.4)	0 (0.0)	74 (4.4)	24 (4.2)
Spain	² 13 (2.8)	48 (4.0)	36 (4.2)	4 (1.7)	² 0 (0.0)	4 (1.6)	0 (0.0)	18 (3.3)	9 (2.7)	47 (4.4)	22 (3.7)
Sweden	² 36 (3.9)	61 (4.0)	2 (1.2)	0 (0.0)	² 0 (0.4)	19 (3.0)	7 (1.9)	45 (4.0)	26 (3.3)	2 (1.2)	1 (1.2)
Switzerland	³ 56 (4.5)	44 (4.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.3)	26 (4.2)	4 (1.5)	61 (4.4)	6 (2.3)
Thailand ¹	—	—	—	—	² 0 (0.0)	0 (0.0)	0 (0.0)	6 (3.5)	20 (4.8)	16 (4.7)	58 (6.6)
United States	³ 24 (3.0)	59 (3.9)	12 (2.2)	4 (1.8)	² 0 (0.1)	3 (1.3)	0 (0.0)	7 (1.8)	3 (0.9)	64 (2.9)	23 (3.1)

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Teacher response data available for 70 to 84 percent of students.

³ Teacher response data available for 50 to 69 percent of students.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared June 1997.)

Table 400.—Eighth grade students' perceptions about mathematics achievement and hours spent on leisure activities, by country: 1994–95

Country	Students' self-perceptions about usually doing well in mathematics								Average hours each day					
	Strongly disagree		Disagree		Agree		Strongly agree		Watching TV or videos	Playing or talking with friends	Doing jobs at home	Playing sports	Reading for enjoyment	Playing computer games
	Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia ¹	3 (0.3)	457 (7.9)	17 (0.7)	487 (5.6)	60 (0.8)	530 (3.9)	20 (0.9)	586 (4.7)	2.4 (0.05)	1.4 (0.03)	0.9 (0.02)	1.6 (0.03)	0.6 (0.02)	0.6 (0.02)
Austria ¹	3 (0.4)	512 (10.1)	21 (1.1)	508 (5.4)	45 (1.2)	535 (4.0)	31 (1.4)	572 (4.3)	1.9 (0.06)	2.9 (0.08)	0.8 (0.03)	1.9 (0.07)	0.8 (0.03)	0.6 (0.03)
Belgium (Flemish)	5 (0.4)	512 (6.7)	29 (1.0)	548 (5.9)	48 (1.1)	567 (6.4)	17 (0.9)	609 (7.2)	2.0 (0.05)	1.6 (0.05)	1.1 (0.03)	1.8 (0.07)	0.7 (0.03)	0.5 (0.06)
Belgium (French) ¹	3 (0.4)	467 (7.8)	19 (1.3)	505 (5.4)	48 (1.3)	528 (3.8)	29 (1.5)	550 (5.0)	1.9 (0.08)	1.7 (0.10)	0.8 (0.03)	1.8 (0.04)	0.8 (0.03)	0.7 (0.03)
Canada	3 (0.3)	480 (9.0)	13 (0.6)	480 (4.9)	49 (1.1)	514 (2.3)	35 (1.1)	570 (3.4)	2.3 (0.04)	2.2 (0.05)	1.0 (0.02)	1.9 (0.03)	0.8 (0.02)	0.5 (0.02)
Colombia ¹	2 (0.4)	—	17 (1.3)	373 (3.7)	51 (1.9)	385 (4.6)	30 (1.4)	398 (5.3)	2.2 (0.07)	1.9 (0.06)	2.3 (0.07)	1.9 (0.06)	0.9 (0.05)	² 0.4 (0.06)
Cyprus	5 (0.4)	411 (7.6)	18 (0.8)	432 (3.7)	46 (1.0)	469 (2.6)	31 (1.0)	521 (4.4)	2.3 (0.04)	1.7 (0.04)	1.0 (0.03)	1.4 (0.04)	0.8 (0.02)	0.8 (0.03)
Czech Republic	2 (0.3)	—	37 (1.4)	516 (4.2)	48 (1.4)	584 (5.2)	13 (1.0)	640 (8.0)	2.6 (0.05)	2.9 (0.09)	1.3 (0.04)	1.9 (0.06)	1.0 (0.03)	0.6 (0.03)
Denmark ¹	1 (0.2)	—	8 (0.6)	431 (7.0)	53 (1.4)	492 (3.0)	38 (1.3)	537 (4.0)	2.2 (0.06)	2.8 (0.07)	1.1 (0.04)	1.7 (0.06)	0.7 (0.03)	0.7 (0.03)
England ¹	1 (0.2)	—	6 (0.6)	475 (8.3)	69 (1.0)	500 (3.0)	24 (1.0)	538 (5.8)	2.7 (0.07)	2.5 (0.06)	0.8 (0.03)	1.5 (0.05)	0.7 (0.03)	0.9 (0.05)
France	6 (0.7)	495 (6.1)	26 (1.1)	513 (4.0)	46 (1.0)	548 (3.4)	22 (0.8)	564 (5.1)	1.5 (0.04)	1.5 (0.05)	0.9 (0.03)	1.7 (0.04)	0.8 (0.03)	0.5 (0.02)
Germany ¹	7 (0.5)	474 (7.1)	24 (1.0)	491 (5.2)	33 (1.1)	511 (5.1)	36 (1.1)	529 (5.3)	1.9 (0.04)	3.5 (0.07)	0.9 (0.02)	1.7 (0.04)	0.7 (0.02)	0.8 (0.04)
Greece ¹	2 (0.3)	—	16 (0.7)	454 (3.6)	55 (0.8)	481 (3.2)	27 (0.8)	515 (4.2)	2.1 (0.04)	1.5 (0.04)	0.9 (0.03)	1.8 (0.04)	1.0 (0.03)	0.7 (0.03)
Hong Kong	11 (0.9)	536 (9.5)	51 (1.2)	577 (6.7)	33 (1.2)	620 (6.7)	5 (0.5)	643 (8.2)	2.6 (0.05)	1.2 (0.04)	0.7 (0.02)	0.9 (0.03)	0.9 (0.02)	0.8 (0.03)
Hungary	3 (0.3)	469 (11.7)	25 (0.9)	490 (4.2)	57 (1.0)	545 (3.4)	15 (0.8)	608 (4.8)	3.0 (0.06)	2.3 (0.05)	2.0 (0.04)	1.7 (0.04)	1.2 (0.04)	0.7 (0.03)
Iceland	3 (0.6)	421 (10.1)	14 (1.4)	447 (4.9)	55 (1.6)	486 (4.5)	28 (1.8)	519 (9.5)	2.2 (0.05)	3.1 (0.06)	0.8 (0.03)	1.8 (0.06)	0.9 (0.06)	0.7 (0.06)
Iran, Islamic Republic	1 (0.4)	—	8 (0.7)	403 (4.3)	62 (1.4)	423 (2.6)	29 (1.4)	450 (3.7)	1.8 (0.06)	1.2 (0.04)	1.8 (0.06)	1.2 (0.09)	1.1 (0.04)	² 0.2 (0.02)
Ireland	3 (0.3)	475 (7.7)	18 (1.0)	492 (5.5)	61 (0.9)	530 (5.2)	18 (1.0)	572 (7.6)	2.1 (0.03)	1.5 (0.06)	0.9 (0.03)	1.4 (0.05)	0.6 (0.02)	0.5 (0.03)
Israel ¹	2 (0.4)	—	12 (1.3)	494 (10.1)	45 (1.9)	513 (6.2)	41 (1.9)	549 (8.3)	3.3 (0.10)	2.4 (0.08)	1.2 (0.05)	1.9 (0.09)	1.0 (0.04)	0.9 (0.04)
Japan	10 (0.5)	523 (3.7)	45 (0.7)	577 (2.3)	40 (0.7)	650 (2.5)	4 (0.3)	669 (7.8)	2.6 (0.04)	1.9 (0.04)	0.6 (0.01)	1.3 (0.03)	0.9 (0.02)	0.6 (0.02)
Korea	9 (0.5)	535 (5.7)	53 (1.0)	572 (3.0)	32 (0.9)	669 (3.0)	6 (0.6)	702 (5.7)	2.0 (0.04)	0.9 (0.03)	0.5 (0.02)	0.5 (0.02)	0.8 (0.03)	0.3 (0.02)
Kuwait ¹	3 (0.7)	364 (11.3)	9 (0.9)	382 (3.6)	49 (1.7)	386 (2.4)	39 (2.1)	405 (3.9)	1.9 (0.07)	1.5 (0.11)	1.2 (0.08)	1.5 (0.10)	1.0 (0.04)	0.7 (0.05)
Latvia (Latvian-speaking schools)	2 (0.3)	—	43 (1.2)	471 (3.5)	43 (1.2)	505 (3.7)	12 (0.8)	542 (5.5)	2.6 (0.05)	2.1 (0.06)	1.5 (0.04)	1.2 (0.04)	1.1 (0.03)	0.7 (0.04)
Lithuania	5 (0.5)	446 (7.5)	46 (1.2)	454 (3.4)	38 (1.2)	492 (4.3)	11 (0.8)	544 (6.0)	2.8 (0.05)	2.7 (0.06)	1.2 (0.03)	1.2 (0.04)	1.0 (0.03)	0.9 (0.04)
Netherlands ¹	4 (0.5)	487 (12.4)	21 (1.4)	504 (7.1)	43 (1.3)	537 (8.4)	32 (1.6)	580 (7.3)	2.5 (0.09)	2.8 (0.08)	0.9 (0.04)	1.8 (0.06)	0.6 (0.03)	0.7 (0.04)
New Zealand	2 (0.3)	—	13 (0.8)	466 (6.1)	62 (0.9)	501 (4.5)	22 (0.8)	559 (5.5)	2.5 (0.05)	1.5 (0.04)	0.9 (0.02)	1.5 (0.04)	0.8 (0.02)	0.7 (0.03)
Norway	3 (0.3)	434 (7.4)	18 (0.9)	455 (3.2)	58 (1.0)	504 (2.2)	21 (0.8)	555 (4.4)	2.5 (0.04)	3.2 (0.06)	1.1 (0.03)	1.9 (0.05)	0.7 (0.02)	0.8 (0.03)
Portugal	7 (0.5)	419 (3.6)	37 (1.1)	435 (2.3)	42 (1.1)	463 (2.5)	14 (0.8)	502 (5.2)	2.0 (0.04)	1.7 (0.05)	1.0 (0.04)	1.7 (0.04)	0.7 (0.02)	0.7 (0.03)
Romania ¹	6 (0.6)	455 (12.0)	25 (1.0)	459 (4.6)	49 (0.9)	488 (4.3)	20 (1.0)	505 (6.3)	1.9 (0.06)	1.5 (0.06)	1.9 (0.08)	1.3 (0.05)	1.3 (0.07)	0.6 (0.05)
Russian Federation	2 (0.3)	—	37 (1.4)	501 (7.1)	43 (1.1)	547 (5.1)	18 (0.8)	590 (4.9)	2.9 (0.05)	2.9 (0.05)	1.5 (0.03)	1.0 (0.03)	1.3 (0.04)	1.0 (0.04)
Scotland ¹	2 (0.3)	—	10 (0.8)	455 (5.5)	66 (1.3)	491 (4.8)	22 (1.3)	553 (9.3)	2.7 (0.05)	2.8 (0.08)	0.7 (0.02)	1.9 (0.05)	0.7 (0.02)	1.0 (0.04)
Singapore	6 (0.4)	587 (9.0)	38 (1.2)	624 (5.2)	46 (1.1)	659 (4.9)	11 (0.6)	677 (6.2)	2.7 (0.05)	1.5 (0.04)	1.0 (0.03)	0.7 (0.03)	1.1 (0.02)	0.6 (0.03)
Slovak Republic	1 (0.2)	—	28 (1.1)	496 (3.8)	55 (1.1)	555 (3.8)	15 (0.7)	619 (5.2)	2.7 (0.05)	2.9 (0.07)	1.5 (0.05)	1.8 (0.04)	1.0 (0.03)	0.6 (0.03)
Slovenia ¹	2 (0.3)	—	24 (1.1)	497 (4.0)	53 (1.0)	538 (3.6)	21 (0.9)	602 (4.2)	2.0 (0.04)	1.7 (0.05)	1.6 (0.05)	1.6 (0.03)	0.9 (0.02)	0.6 (0.02)
Spain	5 (0.5)	441 (4.6)	23 (1.0)	456 (2.6)	45 (1.1)	488 (2.6)	27 (1.0)	522 (3.4)	1.8 (0.05)	1.8 (0.06)	1.1 (0.03)	1.7 (0.04)	0.6 (0.02)	0.3 (0.02)
Sweden	2 (0.3)	—	16 (0.7)	475 (3.4)	61 (0.9)	517 (3.0)	21 (0.8)	565 (3.8)	2.3 (0.04)	2.3 (0.05)	0.9 (0.02)	1.6 (0.04)	0.7 (0.02)	0.6 (0.02)
Switzerland	3 (0.4)	497 (10.1)	21 (0.9)	528 (4.0)	47 (0.9)	541 (3.0)	28 (1.1)	575 (3.3)	1.3 (0.03)	2.4 (0.05)	1.0 (0.03)	1.8 (0.03)	0.8 (0.02)	0.4 (0.02)
Thailand ¹	2 (0.3)	—	38 (1.5)	510 (5.1)	45 (1.1)	529 (6.6)	15 (0.9)	537 (7.4)	2.1 (0.07)	1.2 (0.03)	1.6 (0.03)	1.1 (0.02)	1.0 (0.02)	0.3 (0.02)
United States	3 (0.3)	430 (5.1)	11 (0.6)	462 (4.8)	52 (0.9)	491 (4.3)	34 (1.0)	534 (5.9)	2.6 (0.07)	2.5 (0.06)	1.2 (0.04)	2.2 (0.05)	0.7 (0.02)	0.7 (0.03)

¹ Countries not meeting all International Association for the Evaluation of Educational Achievement's sampling specifications.

² Student response data available for 70 to 84 percent of students.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Middle School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared June 1997.)

Table 401.—Average fourth grade mathematics scores,¹ by content areas, and average time spent studying mathematics out of school, by country: 1994–95

Country	Average percent correct by content area							Amount of daily out-of-school study time in mathematics						
	Overall mathematics scores	Whole numbers	Fractions and proportionality	Measurement, estimation, and number sense	Data representation, analysis, and probability	Geometry	Patterns, relations, and functions	No time		Less than 1 hour		1 hour or more		Average hours ²
								Percent	Mean score	Percent	Mean score	Percent	Mean score	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Australia ³	63 (0.6)	67 (0.6)	51 (0.7)	60 (0.7)	67 (0.8)	74 (0.7)	64 (0.9)	15 (0.9)	526 (5.6)	61 (1.2)	559 (3.2)	24 (1.0)	530 (4.4)	0.8 (0.02)
Austria ³	65 (0.7)	74 (0.8)	51 (0.8)	69 (0.8)	66 (1.1)	67 (0.8)	64 (1.1)	4 (0.7)	555 (8.6)	58 (1.8)	571 (3.8)	38 (1.6)	546 (4.1)	1.0 (0.03)
Canada	60 (1.0)	68 (0.9)	48 (1.0)	54 (1.1)	68 (1.4)	72 (1.4)	62 (1.5)	14 (1.1)	526 (4.4)	60 (1.4)	544 (4.0)	26 (1.2)	522 (5.0)	0.8 (0.02)
Cyprus	54 (0.6)	65 (0.7)	48 (0.7)	48 (0.8)	52 (0.9)	53 (0.9)	55 (1.1)	9 (0.7)	473 (6.1)	51 (1.9)	519 (3.6)	40 (1.6)	495 (3.8)	1.1 (0.03)
Czech Republic	66 (0.6)	75 (0.6)	53 (0.8)	68 (0.7)	67 (0.9)	71 (0.7)	67 (0.9)	9 (0.9)	547 (6.6)	69 (1.2)	576 (3.6)	22 (1.1)	560 (4.3)	0.7 (0.02)
England ^{4,5}	57 (0.7)	58 (0.7)	45 (0.8)	52 (0.7)	64 (0.9)	74 (0.8)	55 (1.0)	— —	— —	— —	— —	— —	— —	— —
Greece	51 (0.9)	62 (1.0)	42 (1.1)	48 (1.0)	50 (1.2)	53 (1.2)	47 (1.2)	6 (0.5)	453 (6.8)	38 (1.6)	512 (4.1)	56 (1.7)	493 (4.0)	1.6 (0.04)
Hong Kong	73 (0.9)	79 (0.9)	66 (1.0)	69 (0.9)	76 (1.0)	74 (0.8)	73 (1.2)	6 (0.7)	550 (7.9)	44 (1.2)	595 (4.2)	50 (1.2)	586 (4.5)	1.3 (0.03)
Hungary ³	64 (0.8)	76 (0.7)	49 (0.9)	64 (0.9)	60 (1.0)	66 (0.8)	69 (1.1)	5 (0.7)	543 (10.8)	58 (1.3)	563 (3.9)	37 (1.4)	533 (4.2)	1.0 (0.03)
Iceland	50 (0.8)	56 (0.9)	36 (1.0)	44 (0.9)	58 (1.2)	63 (1.0)	48 (1.4)	10 (0.8)	457 (4.3)	63 (1.4)	483 (3.5)	27 (1.4)	472 (3.2)	0.8 (0.02)
Iran, Islamic Republic ⁶	38 (0.9)	51 (1.2)	32 (1.0)	36 (0.9)	23 (0.9)	42 (0.9)	40 (1.4)	5 (0.7)	402 (6.6)	17 (1.3)	433 (6.0)	78 (1.5)	443 (4.5)	2.3 (0.07)
Ireland	63 (0.8)	70 (0.8)	58 (1.0)	56 (0.9)	69 (0.9)	66 (0.8)	64 (1.0)	7 (0.6)	516 (7.1)	70 (1.3)	565 (3.2)	23 (1.2)	530 (4.9)	0.8 (0.02)
Israel ^{3,6,7}	59 (1.0)	71 (1.0)	48 (1.1)	54 (1.0)	64 (1.2)	62 (1.0)	60 (1.5)	14 (1.3)	525 (6.4)	46 (2.2)	535 (4.7)	40 (1.9)	528 (4.1)	1.1 (0.05)
Japan	74 (0.4)	82 (0.4)	65 (0.6)	72 (0.5)	79 (0.5)	72 (0.6)	76 (0.6)	10 (0.7)	558 (4.3)	60 (1.1)	598 (2.3)	31 (1.2)	610 (3.0)	0.9 (0.02)
Korea	76 (0.4)	88 (0.3)	65 (0.5)	72 (0.5)	80 (0.6)	72 (0.6)	83 (0.7)	14 (0.8)	593 (4.2)	44 (1.1)	610 (2.5)	42 (1.2)	621 (2.3)	1.0 (0.02)
Kuwait ³	32 (0.5)	36 (0.5)	25 (0.5)	35 (0.6)	26 (0.6)	36 (0.6)	33 (1.0)	5 (0.7)	372 (5.7)	34 (1.4)	410 (3.0)	60 (1.5)	401 (2.8)	1.9 (0.05)
Latvia (Latvian-speaking schools) ³	59 (1.0)	68 (0.9)	44 (1.3)	60 (1.0)	54 (1.3)	67 (1.0)	65 (1.2)	7 (0.7)	476 (7.5)	61 (1.9)	542 (6.3)	33 (1.7)	518 (5.1)	1.0 (0.03)
Netherlands ³	69 (0.7)	75 (0.8)	60 (0.9)	70 (0.8)	75 (0.9)	71 (0.8)	65 (1.1)	47 (2.7)	593 (4.3)	39 (2.3)	578 (3.6)	14 (1.5)	541 (6.1)	0.5 (0.03)
New Zealand	53 (1.0)	57 (1.0)	41 (1.1)	49 (1.1)	61 (1.3)	66 (1.1)	52 (1.2)	21 (1.6)	488 (9.7)	54 (1.7)	512 (4.4)	25 (1.4)	493 (5.2)	0.8 (0.03)
Norway	53 (0.7)	61 (0.8)	38 (0.7)	56 (0.7)	59 (0.9)	58 (0.9)	50 (1.2)	23 (1.3)	503 (4.1)	58 (1.2)	512 (3.3)	19 (1.1)	497 (5.3)	0.6 (0.02)
Portugal	48 (0.7)	57 (0.8)	38 (0.7)	49 (0.8)	43 (1.1)	52 (1.0)	47 (1.1)	3 (0.5)	420 (9.1)	55 (1.7)	489 (3.9)	42 (1.6)	470 (3.9)	1.3 (0.03)
Scotland ⁴	58 (0.8)	61 (0.8)	46 (1.0)	53 (0.9)	66 (1.0)	72 (0.8)	57 (1.0)	26 (1.8)	519 (7.2)	63 (2.0)	528 (3.8)	11 (1.0)	501 (8.9)	0.5 (0.02)
Singapore	76 (0.8)	83 (0.7)	74 (1.0)	67 (1.0)	81 (0.8)	72 (0.8)	76 (0.9)	— —	— —	— —	— —	— —	— —	— —
Slovenia ³	64 (0.6)	74 (0.6)	50 (0.9)	64 (0.9)	64 (1.0)	72 (0.8)	68 (0.8)	3 (0.4)	502 (11.4)	57 (1.5)	563 (3.7)	40 (1.4)	548 (3.7)	1.0 (0.03)
Thailand ³	50 (1.1)	58 (1.3)	44 (1.0)	44 (1.0)	56 (1.5)	53 (1.2)	50 (1.3)	17 (1.3)	470 (4.3)	44 (1.6)	496 (4.5)	39 (1.8)	489 (6.1)	1.0 (0.03)
United States	63 (0.6)	71 (0.7)	51 (0.8)	53 (0.6)	73 (0.9)	71 (0.7)	66 (0.9)	8 (0.5)	516 (4.4)	60 (1.1)	561 (3.1)	32 (1.1)	528 (2.9)	1.0 (0.03)

¹ Fourth grade students or equivalent in most countries.

² Average hours based on: No time = 0; Less than 1 hour = .5; 1–2 hours = 1.5; 3–4 hours = 3.5; More than 4 hours = 5.

³ Did not satisfy one or more guidelines for sample participation rates, age/grade specifications, or classroom sampling procedures.

⁴ Met guidelines for sample participation only after replacement schools were included for question about mathematics content areas.

⁵ National defined population covers less than 90 percent of international desired population.

⁶ Indicates a 70 to 84 percent student response rate on question about time spent studying mathematics.

⁷ National defined population does not cover all of international desired population.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Mathematics Achievement in the Primary School Years*, and *Science Achievement in the Primary School Years: IEA's Third International Mathematics and Science Study*, 1997. (This table was prepared July 1997.)

Table 402.—Average fourth grade science scores,¹ by content areas, and average time spent teaching science in school, by country: 1994–95

Country	Science content areas					Average number of hours science is taught weekly to science classes							
	Overall science scores	Earth science	Life science	Physical science	Environmental issues and the nature of science	Less than 1 hour		1 to 2 hours		2 to 3 hours		More than 3 hours	
						Percent	Mean score	Percent	Mean score	Percent	Mean score	Percent	Mean score
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Australia ^{2,3}	66 (0.5)	61 (0.6)	72 (0.5)	63 (0.7)	63 (0.8)	35 (3.9)	556 (5.0)	55 (4.0)	568 (5.9)	5 (1.5)	562 (18.1)	5 (2.1)	562 (8.4)
Austria ²	66 (0.7)	62 (0.8)	72 (0.7)	64 (0.8)	54 (1.0)	0 (0.0)	—	0 (0.0)	—	97 (1.8)	566 (3.6)	3 (1.8)	540 (30.3)
Canada	64 (0.6)	62 (0.6)	68 (0.6)	61 (0.7)	56 (0.7)	8 (2.0)	536 (10.1)	42 (3.8)	542 (5.1)	27 (3.3)	567 (5.4)	23 (3.2)	550 (4.6)
Cyprus	51 (0.5)	48 (0.7)	55 (0.5)	50 (0.7)	42 (1.0)	—	—	—	—	—	—	—	—
Czech Republic	65 (0.5)	64 (0.6)	71 (0.5)	62 (0.7)	56 (0.9)	2 (1.1)	—	79 (3.6)	557 (3.9)	3 (1.4)	572 (6.8)	16 (3.2)	563 (7.3)
England ^{4,5}	63 (0.6)	61 (0.6)	68 (0.6)	60 (0.8)	56 (1.0)	6 (1.7)	540 (8.7)	27 (4.1)	548 (7.5)	44 (4.8)	556 (5.9)	23 (3.8)	550 (8.2)
Greece	54 (0.8)	52 (0.9)	61 (0.9)	49 (0.9)	43 (1.2)	—	—	—	—	—	—	—	—
Hong Kong	62 (0.7)	61 (0.6)	68 (0.7)	60 (0.8)	50 (1.1)	13 (3.4)	530 (13.3)	84 (3.7)	534 (4.3)	2 (1.5)	—	1 (0.8)	—
Hungary ²	62 (0.6)	62 (0.7)	66 (0.6)	59 (0.8)	50 (0.9)	6 (2.2)	556 (13.3)	72 (4.1)	529 (3.7)	8 (3.0)	521 (8.4)	14 (3.1)	549 (10.5)
Iceland ³	55 (0.7)	55 (0.7)	60 (0.8)	52 (0.7)	47 (1.2)	17 (4.1)	513 (7.3)	41 (5.6)	504 (7.7)	30 (5.1)	499 (6.5)	12 (4.3)	523 (6.8)
Iran, Islamic Republic	40 (0.7)	38 (0.7)	44 (0.7)	40 (0.9)	26 (0.9)	—	—	—	—	—	—	—	—
Ireland	61 (0.6)	60 (0.8)	66 (0.6)	57 (0.7)	55 (0.9)	47 (5.0)	536 (5.6)	40 (4.4)	540 (5.8)	11 (3.1)	550 (7.1)	2 (0.9)	—
Israel ^{2,3,6}	57 (0.8)	51 (0.8)	61 (0.9)	55 (0.9)	51 (1.3)	0 (0.0)	—	53 (5.6)	508 (5.5)	32 (5.8)	494 (6.9)	15 (4.3)	493 (10.6)
Japan	70 (0.3)	66 (0.4)	73 (0.3)	70 (0.4)	62 (0.6)	2 (1.3)	—	1 (0.6)	—	95 (1.8)	575 (1.8)	2 (1.2)	—
Korea	74 (0.4)	72 (0.5)	76 (0.4)	75 (0.5)	70 (0.8)	0 (0.0)	—	1 (0.6)	—	95 (1.8)	597 (1.9)	5 (1.7)	588 (10.3)
Kuwait ^{2,3}	39 (0.5)	36 (0.6)	45 (0.6)	37 (0.5)	25 (0.7)	0 (0.0)	—	1 (0.7)	—	96 (2.0)	402 (3.9)	4 (1.8)	416 (42.2)
Latvia (Latvian-speaking schools) ²	56 (0.8)	57 (1.0)	60 (0.8)	54 (0.9)	46 (1.2)	89 (2.9)	505 (5.7)	5 (2.2)	538 (47.2)	5 (2.2)	532 (11.9)	1 (0.8)	—
Netherlands ²	67 (0.5)	61 (0.6)	73 (0.5)	65 (0.6)	61 (0.9)	38 (5.1)	559 (4.0)	44 (4.8)	556 (4.5)	9 (2.6)	556 (7.2)	9 (2.7)	549 (20.1)
New Zealand ³	60 (0.9)	57 (0.9)	66 (0.9)	57 (1.1)	54 (1.2)	29 (4.2)	542 (8.3)	48 (4.4)	536 (6.1)	14 (3.1)	537 (17.2)	9 (2.6)	509 (21.2)
Norway ³	60 (0.6)	60 (0.6)	67 (0.7)	55 (0.7)	53 (0.9)	73 (5.0)	527 (5.4)	27 (5.0)	535 (7.6)	0 (0.0)	—	0 (0.0)	—
Portugal	50 (0.7)	50 (0.8)	54 (0.8)	49 (0.9)	39 (1.0)	2 (1.1)	—	3 (1.4)	486 (28.2)	12 (3.1)	474 (8.8)	84 (3.6)	481 (4.8)
Scotland ^{3,4}	60 (0.8)	58 (0.9)	65 (0.8)	57 (0.8)	53 (1.2)	35 (4.7)	543 (5.9)	44 (4.7)	534 (6.4)	14 (3.3)	531 (13.2)	7 (2.5)	529 (12.5)
Singapore	64 (0.8)	58 (0.8)	70 (0.8)	64 (0.8)	53 (1.1)	0 (0.0)	—	4 (1.5)	548 (18.9)	96 (1.5)	547 (5.1)	0 (0.0)	—
Slovenia ²	64 (0.7)	64 (0.7)	68 (0.7)	61 (0.8)	54 (0.8)	3 (1.9)	544 (18.9)	60 (5.3)	541 (4.6)	18 (4.0)	550 (9.5)	19 (3.4)	548 (6.8)
Thailand ^{2,3}	49 (0.9)	48 (0.9)	52 (0.8)	46 (1.0)	48 (1.4)	2 (1.2)	—	9 (3.5)	463 (21.5)	17 (6.1)	469 (16.5)	73 (6.6)	477 (6.5)
United States ³	66 (0.5)	64 (0.7)	71 (0.6)	60 (0.6)	65 (0.8)	9 (2.1)	562 (11.5)	16 (2.9)	550 (10.2)	33 (3.8)	578 (5.9)	42 (4.1)	565 (5.1)

¹ Fourth grade or equivalent in most countries.² Did not satisfy one or more guidelines for sample participation rates, age/grade specification, or classroom sampling procedures.³ Teacher response data on amount of time science is taught is 84 percent or less.⁴ Met guidelines for sample participation rates only after replacement schools were included.⁵ National defined population covers less than 90 percent of international desired population.⁶ National defined population does not cover all of international desired population.

—Data not available or not applicable.

NOTE.—Standard errors appear in parentheses.

SOURCE: International Association for the Evaluation of Educational Achievement, *Science Achievement in the Primary School Years: IEA's Third International Mathematics and Science Study, 1997*. (This table was prepared July 1997.)

Table 403.—Reading literacy test scores of 9-year-olds: Selected countries, 1992

Country	Grade tested	Mean age	Overall mean score (s.e.) ¹	Narrative ² 1st quartile	Narrative ² mean score (s.e.) ¹	Narrative ² 3rd quartile	Expository ³ mean score (s.e.) ¹	Documents ⁴ mean score (s.e.) ¹
1	2	3	4	5	6	7	8	9
Finland	3	9.7	569 (3.4)	508	568 (3.0)	602	569 (3.1)	569 (4.0)
United States	4	10.0	547 (2.8)	476	553 (3.1)	619	538 (2.6)	550 (2.7)
Sweden	3	9.8	539 (2.8)	467	536 (2.6)	592	542 (2.7)	539 (3.2)
France	4	10.1	531 (4.0)	467	532 (4.1)	580	533 (4.1)	527 (3.9)
Italy	4	9.9	529 (4.3)	468	533 (4.0)	576	538 (4.0)	517 (4.9)
New Zealand	5	10.0	528 (3.3)	452	534 (3.5)	594	531 (3.1)	521 (3.3)
Norway	3	9.8	524 (2.6)	455	525 (2.8)	576	528 (2.3)	519 (2.8)
Iceland ⁵	3	9.8	518 (0.0)	448	518 (0.0)	571	517 (0.0)	519 (0.0)
Hong Kong	4	10.0	517 (3.9)	431	494 (4.1)	548	503 (3.4)	554 (4.2)
Singapore	3	9.3	515 (1.0)	450	521 (1.1)	567	519 (1.0)	504 (1.0)
Switzerland	3	9.7	511 (2.7)	438	506 (2.6)	566	507 (2.7)	522 (2.8)
Ireland	4	9.3	509 (3.6)	445	518 (3.7)	571	514 (3.2)	495 (3.8)
Belgium ⁶	4	9.8	507 (3.2)	439	510 (3.3)	558	505 (2.8)	506 (3.5)
Greece	4	9.3	504 (3.7)	447	514 (3.8)	567	511 (3.6)	488 (3.8)
Spain	4	10.0	504 (2.5)	429	497 (2.4)	543	505 (2.3)	509 (2.7)
Germany (former West)	3	9.4	503 (3.0)	421	491 (2.8)	543	497 (2.9)	520 (3.2)
Canada ⁷	3	8.9	500 (3.0)	437	502 (3.5)	566	499 (2.7)	500 (2.8)
Germany (former East)	3	9.5	499 (4.3)	414	482 (4.2)	531	493 (3.6)	522 (5.0)
Hungary	3	9.3	499 (3.1)	437	496 (2.9)	541	493 (3.1)	509 (3.5)
Slovenia	3	9.7	498 (2.6)	435	502 (2.7)	570	489 (2.5)	503 (2.5)
Netherlands	3	9.2	485 (3.6)	425	494 (3.3)	539	480 (3.4)	481 (3.9)
Cyprus	4	9.8	481 (2.3)	421	492 (2.4)	548	475 (2.3)	476 (2.1)
Portugal	4	10.4	478 (3.6)	419	483 (3.3)	531	480 (3.0)	471 (4.5)
Denmark	3	9.8	475 (3.5)	386	463 (3.4)	539	467 (3.5)	496 (3.6)
Trinidad/Tobago	4	9.6	451 (3.4)	383	455 (3.6)	502	458 (3.4)	440 (3.3)
Indonesia	4	10.8	394 (3.0)	351	402 (2.8)	436	411 (3.2)	369 (3.0)
Venezuela	4	10.1	383 (3.4)	322	378 (3.2)	426	396 (3.3)	374 (3.7)

¹ s.e.=standard error.² Narrative prose is continuous text in which the writer's aim is to tell a story.³ Expository prose is continuous text designed to describe factual information to the reader.⁴ Documents are structured information presented in the form of charts, tables, maps, graphs, lists, or sets of instructions.⁵ Iceland tested all students, therefore standard errors are not applicable.⁶ Only French-speaking students were tested.⁷ British Columbia only.SOURCE: International Association for the Evaluation of Educational Achievement, *How in the World Do Students Read?*, 1992. (This table was prepared April 1993.)

Table 404.—Reading literacy test scores of 14-year-olds: Selected countries, 1992

Country	Grade tested	Mean age	Overall mean score (s.e.) ¹	Narrative ² mean score (s.e.) ¹	Expository ³ 1st quartile	Expository ³ mean score (s.e.) ¹	Expository ³ 3rd quartile	Documents ⁴ mean score (s.e.) ¹
1	2	3	4	5	6	7	8	9
Finland	8	14.7	560 (2.5)	559 (2.8)	493	541 (2.2)	575	580 (2.5)
France	9	15.4	549 (4.3)	556 (4.2)	484	546 (4.3)	580	544 (4.2)
Sweden	8	14.8	546 (2.5)	556 (2.6)	469	533 (2.4)	576	550 (2.4)
New Zealand	10	15.0	545 (5.6)	547 (5.7)	457	535 (5.7)	597	552 (5.3)
Hungary	8	14.1	536 (3.3)	530 (3.1)	469	536 (3.6)	577	542 (3.2)
Iceland ⁵	8	14.8	536 (0.0)	550 (0.0)	472	548 (0.0)	617	509 (0.0)
Switzerland	8	14.9	536 (3.2)	534 (3.4)	466	525 (3.2)	572	549 (3.0)
Hong Kong	9	15.2	535 (3.7)	509 (3.7)	480	540 (3.8)	576	557 (3.8)
United States	9	15.0	535 (4.8)	539 (4.9)	456	539 (5.6)	599	528 (4.0)
Singapore	8	14.4	534 (1.1)	530 (1.1)	476	539 (1.2)	574	533 (1.1)
Slovenia	8	14.7	532 (2.3)	534 (2.6)	471	525 (2.2)	576	537 (2.2)
Germany (former East)	8	14.4	526 (3.5)	512 (3.9)	464	523 (3.5)	566	543 (2.9)
Denmark	8	14.8	525 (2.1)	517 (2.0)	458	524 (2.2)	573	532 (2.1)
Portugal	9	15.6	523 (3.1)	523 (2.5)	469	523 (3.4)	556	523 (3.4)
Canada ⁶	8	13.9	522 (3.0)	526 (3.1)	449	516 (3.1)	569	522 (2.7)
Germany (former West)	8	14.6	522 (4.4)	514 (4.9)	453	521 (4.5)	573	532 (3.9)
Norway	8	14.8	516 (2.3)	515 (2.1)	464	520 (2.4)	569	512 (2.4)
Italy	8	14.1	515 (3.4)	520 (3.6)	459	524 (3.2)	565	501 (3.3)
Netherlands	8	14.3	514 (4.9)	506 (4.8)	442	503 (4.7)	546	533 (5.3)
Ireland	9	14.5	511 (5.2)	510 (5.3)	439	505 (5.3)	555	518 (4.9)
Greece	9	14.4	509 (2.9)	526 (2.9)	450	508 (3.1)	548	493 (2.6)
Cyprus	9	14.8	497 (2.2)	516 (2.2)	427	492 (2.4)	536	482 (2.0)
Spain	8	14.2	490 (2.5)	500 (3.0)	435	495 (2.6)	536	475 (2.0)
Belgium ⁷	8	14.3	481 (4.9)	484 (5.1)	415	477 (4.8)	522	483 (4.7)
Trinidad/Tobago	9	14.4	479 (1.7)	482 (1.7)	408	485 (1.8)	537	472 (1.7)
Thailand	9	15.2	477 (6.2)	468 (6.6)	429	486 (5.9)	533	478 (6.2)
Philippines	8	14.5	430 (3.9)	421 (3.6)	378	439 (4.1)	472	430 (3.9)
Venezuela	9	15.5	417 (3.1)	407 (2.9)	381	433 (3.3)	482	412 (3.0)
Nigeria ^{8,9}	9	15.3	401 (—)	402 (—)	351	406 (—)	441	394 (—)
Zimbabwe ⁹	9	15.5	372 (3.8)	367 (3.3)	326	374 (3.6)	411	373 (4.6)
Botswana	9	14.7	330 (2.0)	340 (1.6)	294	339 (1.9)	371	312 (2.4)

¹ s.e.=standard error.² Narrative prose is continuous text in which the writer's aim is to tell a story.³ Expository prose is continuous text designed to describe factual information to the reader.⁴ Documents are structured information presented in the form of charts, tables, maps, graphs, lists, or sets of instructions.⁵ Iceland tested all students, therefore standard errors are not applicable.⁶ British Columbia only.⁷ Only French-speaking students were tested.⁸ Insufficient data to calculate the standard error.⁹ Sampling response rate of schools was below 80 percent.

—Data not available.

SOURCE: International Association for the Evaluation of Educational Achievement, *How in the World Do Students Read?*, 1992. (This table was prepared April 1993.)

Table 405.—Number of bachelor's degree recipients per 100 persons of the theoretical age of graduation,¹ by sex: Selected countries, 1989 to 1994

Country	Men and women					Men					Women				
	1989	1990	1991	1992	1994	1989	1990	1991	1992	1994	1989	1990	1991	1992	1994
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Australia	20.8	—	24.4	26.3	31.5	19.3	—	21.6	22.0	25.4	22.3	—	27.3	30.8	37.9
Austria	6.7	7.8	7.8	—	—	7.7	8.7	8.5	7.8	—	5.6	7.0	7.0	5.2	—
Belgium	—	—	13.3	—	—	—	—	15.0	—	—	—	—	11.5	—	—
Canada	30.2	31.8	33.3	32.2	30.2	26.9	27.6	28.2	26.9	25.5	33.5	36.0	38.7	37.7	35.1
Denmark	12.9	15.0	16.5	22.1	² 20.2	11.5	13.2	14.4	17.6	² 16.1	14.4	16.8	18.7	26.9	² 24.6
Finland	—	—	—	6.5	7.5	—	—	—	—	9.3	—	—	—	—	5.5
France	13.9	14.9	16.3	—	—	13.8	14.7	14.9	—	—	14.0	15.1	17.7	—	—
Germany ³	13.2	12.9	13.3	—	—	16.1	15.7	15.9	—	—	10.1	10.0	10.6	—	—
Ireland	16.3	17.5	16.0	17.4	² 22.8	—	16.9	15.8	17.7	² 22.3	—	18.2	16.2	17.1	² 23.4
Italy	—	—	—	—	.8	—	—	—	—	0.5	—	—	—	—	1.0
Japan	—	21.8	23.7	23.4	23.4	—	30.9	33.5	32.3	31.2	—	12.3	13.7	14.1	15.3
Netherlands	10.2	8.0	8.3	17.8	² 17.4	12.3	9.4	9.6	17.6	² 17.2	7.9	6.5	6.9	18.0	² 17.6
New Zealand	15.7	15.1	16.1	18.0	² 21.9	16.4	15.7	16.5	17.7	² 19.9	15.0	14.6	15.8	18.3	² 24.0
Norway	—	—	—	19.4	17.6	—	—	—	14.8	12.5	—	—	—	24.2	22.9
Portugal	—	—	—	—	1.8	—	—	—	—	1.2	—	—	—	—	2.4
Spain	—	—	—	8.0	² 8.6	—	—	—	5.8	² 6.8	—	—	—	10.4	² 10.4
Sweden	13.1	12.2	12.5	11.4	6.9	11.1	10.5	11.0	9.6	4.8	15.1	14.0	14.2	13.3	9.1
Switzerland	7.7	7.8	7.6	—	—	10.1	10.3	9.8	—	—	5.3	5.1	5.4	—	—
Turkey	6.3	6.5	6.5	6.0	² 7.1	7.9	8.2	8.2	7.4	² 8.8	4.7	4.7	4.7	4.4	² 5.4
United Kingdom	—	—	—	20.4	27.0	—	—	—	21.1	26.5	—	—	—	19.7	27.5
United States	27.8	28.1	28.1	27.4	31.8	26.1	25.9	25.3	24.7	28.4	29.6	30.5	31.0	30.3	35.2

¹ In most countries the theoretical age of graduation was 22 or 23. The range was from 21 to 25. The number of bachelor's degree recipients may be of any age.

² Data for 1993.

³ Data for 1989 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996. (This table was prepared April 1997.)

Table 406.—Percent of bachelor's degrees awarded in science: Selected countries, 1985 to 1994

Country	All science degrees				Natural sciences				Mathematics and computer science				Engineering			
	1985	1990	1991	1994	1985	1990	1991	1994	1985	1990	1991	1994	1985	1990	1991	1994
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Australia	—	—	21.6	21.5	—	—	15.9	10.6	—	—	—	3.8	—	—	5.7	7.1
Austria	16.8	19.6	20.1	30.2	5.0	5.3	5.9	11.5	4.1	5.2	4.8	5.4	7.7	9.0	9.5	13.3
Belgium	14.7	—	32.2	¹ 32.0	4.6	—	4.3	¹ 9.3	1.7	—	1.7	¹ 2.1	8.4	—	26.3	¹ 20.6
Canada	17.1	16.4	15.5	19.3	4.9	6.0	5.7	8.2	4.5	4.2	3.7	3.7	7.7	6.2	6.1	7.4
Denmark	22.5	26.1	27.6	¹ 23.4	6.3	4.4	6.1	¹ 6.6	—	—	0.1	¹ 1.3	16.2	21.7	21.4	¹ 15.5
Finland	39.3	33.5	34.5	40.2	7.7	4.1	4.2	8.8	6.3	5.9	6.6	7.1	25.3	23.4	23.7	24.3
Germany ²	23.8	31.3	31.5	¹ 41.3	5.0	7.2	7.3	¹ 12.6	2.3	3.5	3.9	¹ 5.5	16.5	20.5	20.2	¹ 23.2
Ireland	28.8	34.1	28.5	¹ 30.0	12.8	14.1	12.4	¹ 13.5	4.0	6.3	4.4	¹ 5.0	12.0	13.7	11.6	¹ 11.5
Italy	19.5	19.7	19.8	23.6	8.1	7.6	7.5	8.8	3.1	3.9	3.8	2.9	8.3	8.3	8.5	11.9
Japan	22.7	23.5	23.5	31.1	2.4	2.4	2.4	9.6	—	—	—	—	20.3	21.0	21.1	21.5
Netherlands	21.8	21.1	21.4	¹ 22.5	8.5	7.1	6.5	¹ 6.6	1.2	1.6	1.6	¹ 2.5	12.1	12.4	13.3	13.4
New Zealand	20.5	19.5	16.3	¹ 19.0	11.7	8.2	7.1	¹ 8.5	5.5	5.5	4.0	¹ 4.3	3.3	5.8	5.2	¹ 6.2
Norway	6.1	12.9	12.3	26.9	2.5	2.1	1.8	7.2	1.8	0.6	0.6	0.9	1.8	10.2	9.9	¹ 18.8
Portugal	—	24.3	—	21.7	6.5	6.7	—	5.9	—	7.0	—	2.5	—	10.5	—	13.3
Spain	13.9	15.0	15.4	¹ 20.0	5.5	5.7	5.3	¹ 6.8	1.3	2.6	2.9	¹ 3.7	7.0	6.7	7.1	9.5
Sweden	15.4	24.0	24.3	27.9	2.6	4.1	4.2	6.8	1.6	4.7	4.9	5.2	11.3	15.2	15.2	15.9
Switzerland	20.2	23.0	22.7	31.3	10.3	11.2	11.0	16.3	2.1	3.7	3.8	3.4	7.9	8.1	7.9	11.6
Turkey	23.0	20.6	21.3	¹ 29.6	3.6	4.6	4.9	¹ 10.5	1.6	2.1	2.3	¹ 2.8	17.8	13.8	14.1	16.3
United States	21.7	16.9	15.9	18.2	6.3	5.1	5.1	7.3	5.5	4.0	3.6	3.3	9.8	7.8	7.2	¹ 7.6

¹ Data for 1993.

² Data for 1985 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996. (This table was prepared April 1997.)

Table 407.—Percent of graduate degrees awarded in science: Selected countries, 1985, 1990, and 1991

Country	All science degrees			Natural sciences			Mathematics and computer science			Engineering		
	1985	1990	1991	1985	1990	1991	1985	1990	1991	1985	1990	1991
1	2	3	4	5	6	7	8	9	10	11	12	13
Australia	—	—	13.9	—	—	9.6	—	—	—	—	—	4.3
Austria	43.3	37.7	37.4	14.2	12.3	13.4	7.3	4.6	6.1	21.7	20.8	17.9
Canada	19.7	20.0	19.7	7.5	7.8	7.7	2.8	3.4	3.4	9.4	8.8	8.7
Denmark	16.0	22.2	22.9	4.1	5.8	5.4	2.7	4.8	4.5	9.2	11.6	13.0
Finland	47.6	30.6	29.2	24.0	14.7	12.4	6.3	5.4	4.6	17.2	10.5	12.2
Germany ¹	27.7	33.2	33.9	18.7	23.5	23.3	1.8	2.3	2.2	7.2	7.4	8.4
Ireland	31.4	34.5	28.4	18.9	19.5	15.7	2.6	5.8	4.1	9.9	9.3	8.6
Japan	50.1	54.6	54.2	9.5	9.5	9.5	—	—	—	40.5	45.1	44.7
Netherlands	—	28.9	29.9	20.6	17.7	16.7	—	1.5	1.6	7.5	9.7	11.6
New Zealand	45.1	22.6	19.3	24.6	13.8	11.5	5.4	4.7	3.6	15.1	4.0	4.2
Norway	40.1	33.4	33.8	17.9	8.0	7.9	3.5	2.1	2.5	18.7	23.3	23.4
Spain	35.6	26.9	26.6	28.6	19.7	19.1	1.8	1.4	2.5	5.1	5.7	5.0
Sweden	48.0	48.5	44.4	21.2	19.4	15.1	6.8	9.2	8.2	20.0	19.9	21.1
Switzerland	30.7	30.2	32.6	20.3	22.0	23.1	2.8	1.7	1.8	7.6	6.5	7.6
Turkey	35.8	24.0	21.7	6.6	7.6	6.4	2.8	3.3	2.8	26.3	13.2	12.4
United States	13.5	14.5	13.8	4.5	4.2	3.8	2.8	3.4	3.2	6.3	6.9	6.7

¹ Data for 1985 are for the former West Germany.
 —Data not available.

SOURCE: Organization for Economic Cooperation and Development, unpublished data. (This table was prepared May 1995.)

Table 408.—Public education expenditures per student, by level of student: Selected countries, 1985 to 1993
[In constant 1993 dollars]

Country	Primary					Secondary					Higher education				
	1985	1990	1991	1992	1993 ¹	1985	1990	1991	1992	1993 ¹	1985	1990	1991	1992	1993 ¹
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Austria	\$3,554	\$3,632	\$3,791	\$4,130	\$4,291	\$4,061	\$4,771	\$4,965	\$6,612	\$6,721	\$6,753	\$6,560	\$6,834	\$5,994	\$8,642
Belgium	2,299	2,195	2,273	2,462	2,953	5,437	4,949	5,305	5,304	5,373	7,310	6,363	6,615	6,787	6,380
Denmark	3,677	4,579	4,665	4,346	4,745	5,196	5,459	5,706	5,088	6,175	8,826	8,582	8,153	6,911	8,045
France	—	—	2,749	2,987	3,154	—	—	4,923	5,593	5,685	—	—	5,050	6,200	6,033
Germany ²	—	—	—	3,069	2,815	—	—	—	4,388	6,481	—	—	—	—	7,902
Japan	—	—	—	3,636	3,960	—	—	—	4,017	4,356	—	—	—	12,205	7,556
Ireland	1,363	1,472	1,636	1,823	1,882	2,346	2,475	2,640	2,853	3,031	5,327	5,693	5,927	7,488	7,076
Norway	3,505	3,995	4,122	4,614	—	4,961	5,307	5,704	6,386	—	8,092	8,887	8,917	8,981	8,343
Portugal	1,369	1,989	2,239	—	2,581	1,811	—	2,508	—	2,491	3,844	—	6,536	—	5,667
Spain	1,482	1,854	1,974	2,091	2,293	2,058	2,787	2,896	3,234	3,033	1,964	3,250	3,440	3,883	3,835
Sweden ¹	—	5,429	5,803	4,985	4,917	—	6,480	7,039	6,231	5,651	—	8,929	9,083	7,333	12,693
Switzerland ¹	—	—	5,779	3,667	5,835	—	—	6,963	—	7,024	—	—	15,577	13,286	15,731
Turkey	—	—	599	—	832	—	—	535	—	587	—	—	2,965	—	2,696
United Kingdom	2,406	2,984	2,964	3,213	3,295	3,979	5,664	4,514	4,521	4,494	—	—	10,207	10,680	8,241
United States	4,495	5,380	5,492	5,768	5,492	5,440	6,742	6,866	6,664	6,541	10,527	12,373	12,521	12,236	14,607

¹ Change in definition in 1992.

² Data for 1985 are for the former West Germany.
 —Data not available.

NOTE.—Data adjusted to U.S. dollars using the purchasing-power-parity (PPP) index. The data used per student include only the expenditure for educational institutions. Pub-

lic subsidies for students' living expenses are excluded. The figures include public expenditures per student in public and private institutions.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996; and unpublished data. (This table was prepared September 1997.)

Table 409.—Public expenditures for education as a percentage of gross domestic product, by level of education: Selected countries, 1985 to 1993

Country	All levels ¹							Primary education							Secondary education							Higher education						
	1985	1988	1989	1990	1991	1992	1993	1985	1988	1989	1990	1991	1993	1985	1988	1989	1990	1991	1993	1985	1988	1989	1990	1991	1992	1993		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
Australia	6.0	5.5	—	—	4.6	4.5	4.9	1.8	1.6	—	—	1.5	1.6	2.1	1.9	—	—	1.5	2.1	1.8	1.8	—	—	1.5	1.8	1.1		
Austria	5.7	5.5	5.3	5.2	5.4	—	5.3	1.0	1.0	0.9	0.9	1.0	1.0	2.8	2.7	2.6	2.5	2.6	2.5	1.0	1.1	1.1	1.1	1.1	—	1.1		
Belgium	6.4	5.6	5.7	5.2	—	—	5.6	1.1	1.0	0.9	0.9	—	1.1	3.0	2.5	2.5	2.3	—	2.6	1.0	0.9	0.9	0.9	—	—	1.0		
Denmark	6.2	6.4	6.4	6.2	6.1	6.2	6.7	1.7	1.7	1.7	1.7	1.7	1.5	2.8	2.9	2.9	2.7	2.7	2.9	1.2	1.3	1.3	1.3	1.3	1.3	1.3		
Germany ²	4.6	4.3	—	—	4.1	3.7	4.5	0.6	0.6	—	—	0.5	0.7	2.2	2.0	—	—	1.9	2.3	1.0	1.0	—	—	0.9	1.0	0.9		
Ireland	5.9	5.6	5.3	5.2	5.4	5.7	5.2	1.7	1.6	1.6	1.5	1.6	1.5	2.4	2.3	2.2	2.1	2.2	2.2	0.9	1.0	1.0	1.0	1.1	1.4	1.0		
Italy	4.7	4.9	5.0	5.2	—	—	5.0	1.2	1.1	1.2	1.1	—	1.1	2.0	2.2	2.3	2.2	—	2.4	0.6	0.8	0.7	1.0	—	—	0.8		
Japan	—	—	—	—	—	3.6	3.7	—	—	—	—	—	1.4	—	—	—	—	—	1.6	—	—	—	—	—	0.3	0.4		
Luxembourg	—	6.0	5.8	—	—	—	—	—	2.1	2.0	—	—	—	—	2.5	2.4	—	—	—	—	0.2	0.2	—	—	—	—		
New Zealand	—	5.2	6.3	—	5.8	—	6.0	—	1.4	1.7	—	1.5	1.7	—	1.2	1.5	—	1.3	2.7	—	1.6	1.8	—	2.0	—	1.2		
Norway	5.6	6.4	6.5	6.4	6.8	—	7.6	1.7	1.9	1.8	1.6	1.7	1.7	2.7	2.9	2.8	2.7	2.8	2.7	0.8	1.0	1.1	1.2	1.3	—	1.5		
Portugal	—	—	4.8	4.8	5.5	5.2	5.3	2.1	2.3	2.1	2.1	2.2	1.9	1.2	1.4	1.6	1.6	2.0	1.9	0.6	0.8	0.9	0.9	0.9	0.9	0.8		
Spain	3.6	3.9	4.2	4.4	4.5	4.2	4.5	1.2	1.1	1.1	1.0	1.0	1.0	1.8	2.1	2.2	2.3	2.4	2.4	0.4	0.6	0.6	0.7	0.8	0.9	0.8		
Sweden	—	5.9	5.5	5.7	6.1	6.7	6.7	—	2.2	2.0	2.0	2.2	2.0	0.0	2.5	2.4	2.5	2.7	2.6	—	1.0	0.9	1.1	1.1	1.0	1.5		
Switzerland	5.1	5.1	—	—	5.4	—	5.6	2.9	2.8	—	—	1.4	1.6	1.3	1.3	—	—	2.4	2.5	1.0	1.0	—	—	1.2	—	1.2		
Turkey	—	—	—	—	4.0	—	3.3	—	—	—	—	1.9	1.7	—	—	—	—	1.0	0.8	—	—	—	—	1.0	—	0.8		
United Kingdom	5.3	5.0	4.9	5.1	4.9	4.1	4.7	1.2	1.3	1.3	1.3	1.3	1.6	2.2	2.3	2.2	2.3	2.2	2.3	1.1	0.9	0.9	0.9	1.0	0.1	0.7		
United States	5.0	5.2	5.1	5.6	5.7	5.7	5.1	1.5	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	1.9	1.3	1.4	1.2	1.5	1.5	1.6	1.2		

¹ Includes primary, secondary, and higher education not classified by level of education.

² Data before 1990 are for the former West Germany.

—Data not available.

SOURCE: Organization for Economic Cooperation and Development, *Education at a Glance*, 1996; and unpublished data. (This table was prepared April 1997.)

Table 410.—Foreign students enrolled in institutions of higher education in the United States and outlying areas, by continent, region, and selected countries of origin: 1980–81 to 1995–96

Continent, region, and country	1980–81		1985–86		1990–91		1991–92		1992–93		1993–94		1994–95		1995–96	
	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent	Number	Per-cent
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Total	311,880	100.0	343,780	100.0	407,530	100.0	419,590	100.0	438,620	100.0	449,704	100.0	452,635	100.0	453,787	100.0
Africa	38,180	12.2	34,190	9.9	23,800	5.8	21,900	5.2	20,520	4.7	20,569	4.6	20,724	4.6	20,844	4.6
Eastern Africa	6,260	2.0	6,730	2.0	7,590	1.9	7,040	1.7	6,950	1.6	7,093	1.6	7,139	1.6	7,596	1.7
Central Africa	1,130	0.4	1,540	0.4	1,650	0.4	1,690	0.4	1,470	0.3	1,472	0.3	1,430	0.3	1,346	0.3
North Africa	7,310	2.3	5,980	1.7	4,540	1.1	4,090	1.0	3,730	0.9	3,614	0.8	3,522	0.8	3,422	0.8
Southern Africa	1,480	0.5	2,360	0.7	2,840	0.7	2,660	0.6	2,560	0.6	2,563	0.6	2,672	0.6	2,657	0.6
West Africa	22,000	7.1	17,580	5.1	7,180	1.8	6,400	1.5	5,800	1.3	5,804	1.3	5,943	1.3	5,818	1.3
Nigeria	17,350	5.6	13,710	4.0	3,710	0.9	3,160	0.8	2,490	0.6	2,285	0.5	2,147	0.5	2,093	0.5
Europe	25,330	8.1	34,310	10.0	49,640	12.2	53,710	12.8	58,010	13.2	62,442	13.9	64,811	14.3	67,353	14.8
Eastern Europe	1,670	0.5	1,770	0.5	4,780	1.2	6,890	1.6	9,800	2.2	12,929	2.9	15,906	3.5	18,032	4.0
Western Europe	23,660	7.6	32,540	9.5	44,860	11.0	46,820	11.2	48,210	11.0	49,496	11.0	48,905	10.8	49,326	10.9
France	—	—	3,680	1.1	5,630	1.4	5,580	1.3	5,660	1.3	5,976	1.3	5,843	1.3	5,710	1.3
Germany, Federal Republic of ¹	3,310	1.1	4,730	1.4	7,000	1.7	7,570	1.8	7,880	1.8	8,508	1.9	8,592	1.9	9,017	2.0
Greece	3,750	1.2	4,440	1.3	4,360	1.1	4,490	1.1	4,350	1.0	4,144	0.9	3,699	0.8	3,365	0.7
Spain	—	—	1,740	0.5	4,300	1.1	4,590	1.1	5,160	1.2	5,246	1.2	5,126	1.1	4,809	1.1
United Kingdom	4,440	1.4	5,940	1.7	7,300	1.8	7,470	1.8	7,630	1.7	7,828	1.7	7,786	1.7	7,799	1.7
Latin America	49,810	16.0	45,480	13.2	47,580	11.7	43,200	10.3	43,250	9.9	45,246	10.1	47,239	10.4	47,253	10.4
Caribbean	10,650	3.4	11,100	3.2	12,610	3.1	11,120	2.7	10,270	2.3	10,672	2.4	11,286	2.5	10,737	2.4
Central America	12,970	4.2	12,740	3.7	15,950	3.9	12,820	3.1	13,460	3.1	13,886	3.1	14,923	3.3	14,220	3.1
Mexico	6,730	2.2	5,460	1.6	6,740	1.7	6,650	1.6	7,580	1.7	8,021	1.8	9,003	2.0	8,687	1.9
South America	26,190	8.4	21,640	6.3	19,020	4.7	19,250	4.6	19,530	4.5	20,708	4.6	21,030	4.6	22,296	4.9
Brazil	—	—	2,840	0.8	3,900	1.0	4,260	1.0	4,540	1.0	4,977	1.1	5,017	1.1	5,497	1.2
Colombia	—	—	4,010	1.2	3,180	0.8	2,930	0.7	2,850	0.6	3,077	0.7	3,208	0.7	3,462	0.8
Venezuela	11,750	3.8	7,040	2.0	2,890	0.7	3,130	0.7	3,440	0.8	3,742	0.8	4,092	0.9	4,456	1.0
Middle East	84,710	27.2	52,720	15.3	33,420	8.2	31,210	7.4	30,240	6.9	29,509	6.6	30,246	6.7	30,563	6.7
Iran	47,550	15.2	14,210	4.1	6,260	1.5	4,930	1.2	4,090	0.9	3,621	0.8	2,896	0.6	2,628	0.6
Jordan	6,140	2.0	6,590	1.9	4,320	1.1	3,700	0.9	3,260	0.7	2,826	0.6	2,431	0.5	2,222	0.5
Lebanon	6,770	2.2	7,090	2.1	3,900	1.0	3,080	0.7	2,540	0.6	2,165	0.5	1,835	0.4	1,554	0.3
Saudi Arabia	10,440	3.3	6,900	2.0	3,590	0.9	3,550	0.8	3,750	0.9	3,721	0.8	4,075	0.9	4,191	0.9
Turkey	—	—	2,460	0.7	4,080	1.0	4,560	1.1	4,980	1.1	5,474	1.2	6,716	1.5	7,678	1.7
North America²	14,790	4.7	16,030	4.7	18,950	4.6	19,780	4.7	21,550	4.9	23,288	5.2	23,394	5.2	23,644	5.2
Canada	14,320	4.6	15,410	4.5	18,350	4.5	19,190	4.6	20,970	4.8	22,655	5.0	22,747	5.0	23,005	5.1
Oceania	4,180	1.3	4,030	1.2	4,230	1.0	3,870	0.9	4,300	1.0	3,857	0.9	4,327	1.0	4,202	0.9
South and East Asia	94,640	30.3	156,830	45.6	229,830	56.4	245,810	58.6	260,670	59.4	264,693	58.9	261,789	57.8	259,893	57.3
East Asia	51,650	16.6	80,720	23.5	146,020	35.8	158,490	37.8	168,410	38.4	171,279	38.1	168,190	37.2	166,717	36.7
China	2,770	0.9	13,980	4.1	39,600	9.7	42,940	10.2	45,130	10.3	44,381	9.9	39,403	8.7	39,613	8.7
Hong Kong	9,660	3.1	10,710	3.1	12,630	3.1	13,190	3.1	14,020	3.2	13,752	3.1	12,935	2.9	12,018	2.6
Japan	13,500	4.3	13,360	3.9	36,610	9.0	40,700	9.7	42,840	9.8	43,770	9.7	45,276	10.0	45,531	10.0
Korea, Republic of	6,150	2.0	18,660	5.4	23,360	5.7	25,720	6.1	28,520	6.5	31,076	6.9	33,599	7.4	36,231	8.0
Taiwan	19,460	6.2	23,770	6.9	33,530	8.2	35,550	8.5	37,430	8.5	37,581	8.4	36,407	8.0	32,702	7.2
South Central Asia	14,540	4.7	25,800	7.5	42,370	10.4	46,810	11.2	50,430	11.5	48,941	10.9	47,836	10.6	45,401	10.0
India	9,250	3.0	16,070	4.7	28,860	7.1	32,530	7.8	35,950	8.2	34,796	7.7	33,537	7.4	31,743	7.0
Pakistan	2,990	1.0	5,440	1.6	7,730	1.9	8,120	1.9	8,020	1.8	7,299	1.6	6,989	1.5	6,427	1.4
South East Asia	28,450	9.1	50,310	14.6	41,440	10.2	40,510	9.7	41,830	9.5	44,461	9.9	45,763	10.1	47,774	10.5
Indonesia	3,250	1.0	8,210	2.4	9,520	2.3	10,250	2.4	10,920	2.5	11,744	2.6	11,872	2.6	12,820	2.8
Malaysia	6,010	1.9	23,020	6.7	13,610	3.3	12,650	3.0	12,660	2.9	13,718	3.1	13,617	3.0	14,015	3.1
Philippines	—	—	3,920	1.1	4,270	1.0	3,950	0.9	3,700	0.8	3,528	0.8	3,472	0.8	3,127	0.7
Singapore	—	—	3,930	1.1	4,500	1.1	4,760	1.1	4,860	1.1	4,823	1.1	4,473	1.0	4,098	0.9
Thailand	6,550	2.1	6,940	2.0	7,090	1.7	7,690	1.8	8,630	2.0	9,537	2.1	10,889	2.4	12,165	2.7
Stateless³	240	0.1	190	0.1	80	(⁴)	120	(⁴)	80	(⁴)	100	(⁴)	105	(⁴)	30	(⁴)

¹ 1990–91 and later years data are for Germany, which includes the former Federal Republic of Germany and the former Democratic Republic of Germany.

² Excludes Mexico and Central America, which are included with Latin America.

³ Home country unknown or undeclared.

⁴ Less than .05 percent.

—Data not available.

NOTE.—Data are for “nonimmigrants,” i.e., students who have not migrated to this country. Because of rounding, details may not add to totals.

SOURCE: Institute of International Education, *Open Doors*, various years; and unpublished data. (Latest edition copyright © 1996 by the Institute of International Education. All rights reserved.) (This table was prepared April 1997.)